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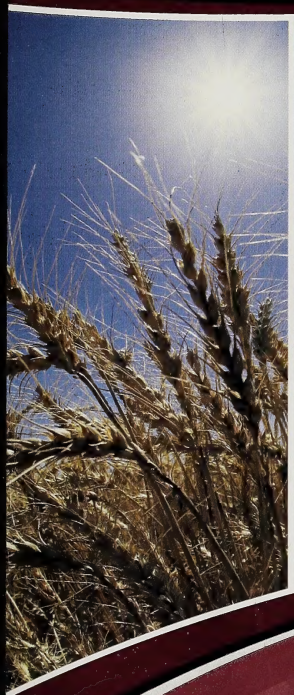
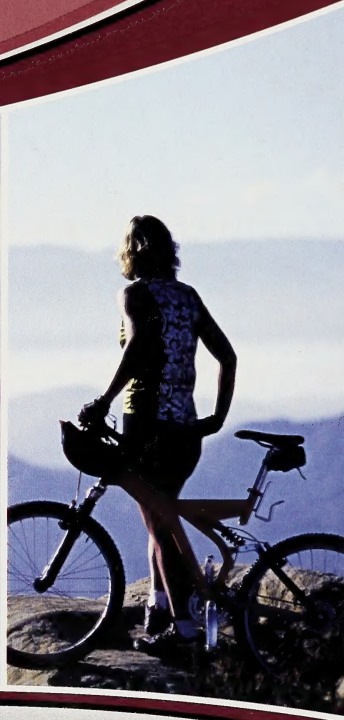
MATHEMATICS 24





Module 1
INDEPENDENT LIVING

Learning Technologies Branch

Alberta LEARNING

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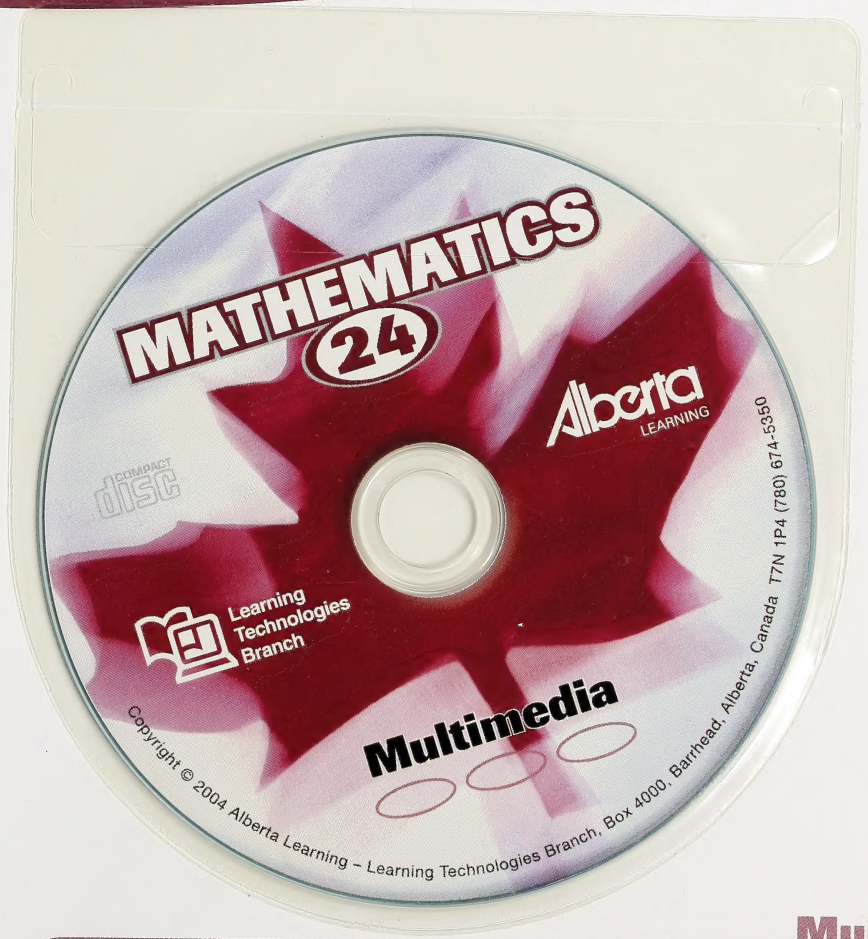
Multimedia

- Converting from Nets to Solids and from Solids to Nets
- Filling In an Income Tax Form
- Finding the Time in Other Places
- Getting Random Results: Coin
- Getting Random Results: Dice
- Getting Random Results: Spinner
- Making Complicated Area Problems Simpler
- Making Graphs with a Spreadsheet
- Scoring Goals in an International Hockey Shootout
- Viewing 3-D Objects
- Module 6: Section 2: Lesson 1 and Related Diagrams
- Excel Spreadsheet Templates



Multimedia

MATHEMATICS 24

Module 1
INDEPENDENT LIVING

Mathematics 24
Module 1: Independent Living
Student Module Booklet
Learning Technologies Branch
ISBN 0-7741-2557-8

The Learning Technologies Branch acknowledges with appreciation the Alberta Distance Learning Centre and Pembina Hills Regional Division No. 7 for their review of this Student Module Booklet.

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	

You may find the following Internet sites useful:

- Alberta Learning, **http://www.learning.gov.ab.ca**
- Learning Technologies Branch, **http://www.learning.gov.ab.ca/ltb**
- Learning Resources Centre, **http://www.lrc.learning.gov.ab.ca**

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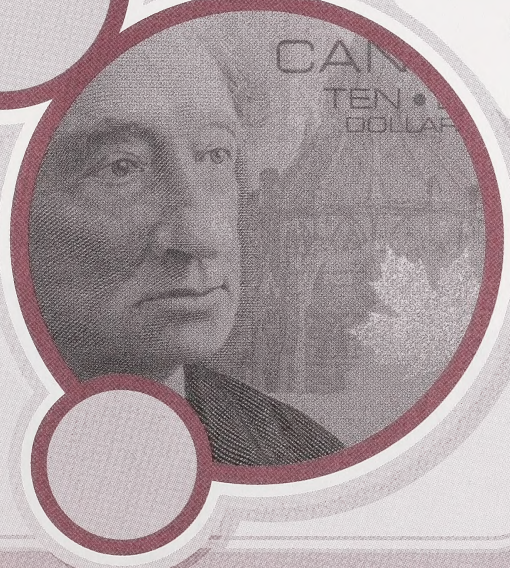
Welcome to MATHEMATICS 24

Module One

Mathematics 24 contains six modules. You should work through the modules in order (from 1 to 6) because concepts and skills introduced in one module will be reinforced, extended, and applied in later modules.



Module 1
INDEPENDENT LIVING

Module 2
WHEELS

Module 3
APPLYING GEOMETRY

Module 4
MAPS, DATA, and PROBABILITY

Module 5
STATISTICS

Module 6
DESIGN and CONSTRUCTION

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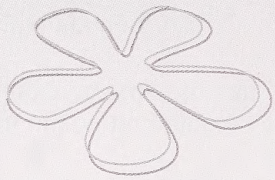
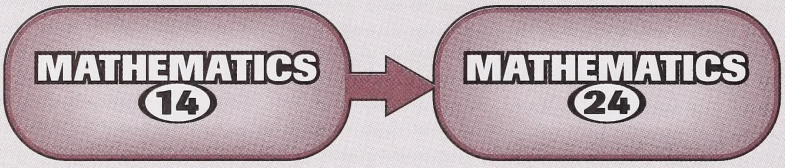


COURSE FEATURES

The Mathematics 14–24 Program

Mathematics 24 is the second course in the Mathematics 14–24 sequence of courses. If you successfully complete each of these five-credit courses, you will meet the minimum requirements in mathematics for an Alberta high school diploma.



The Mathematics 14–24 sequence is designed for students whose needs, interests, and abilities focus on basic mathematical understanding. This course sequence emphasizes the acquisition of practical life skills and proficiency in using mathematics to solve problems, adapt to change, interpret information, and build on previous knowledge.

Consult your teacher or counsellor for the latest information. Also, if you have access to the Internet, you can find out more about Mathematics 24 and high school requirements at the Alberta Learning website.

http://www.learning.gov.ab.ca

Take the time to look through the Student Module Booklets and the Assignment Booklets and notice the following design features:

- Each module has a Module Overview, Module Summary, and Review.
- Each module has several sections. Each section focuses on a big idea that is central to the topic being learned in the module.
- Each section has several lessons.
- Each module has a Glossary and an Answer Key in the Appendix. In some modules there are also special pull-out pages in the Appendix.
- Each module references the multimedia CD.

The following web diagram shows the organization of each module in Mathematics 24.

Required Resources

There are no spaces provided in the Student Module Booklets for your answers. This means you will need a binder and loose-leaf paper or a notebook to do your work.

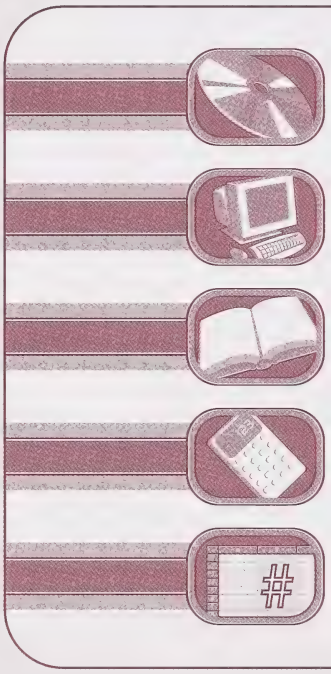
In order to complete the course, you will need a copy of the Mathematics 24 textbook, *Quantum*, and a scientific calculator (such as the Texas Instruments TI-30X IIS).

You must have access to a computer to complete the spreadsheet activities. You will also need spreadsheet software.

You will also need access to a computer to view material on the multimedia CD and to access optional Internet sites.

Visual Cues

For your convenience, the most important mathematical rules and definitions are highlighted. Icons are also used as visual cues. Each icon tells you to do something.



Refer to the multimedia CD.

Use the Internet.

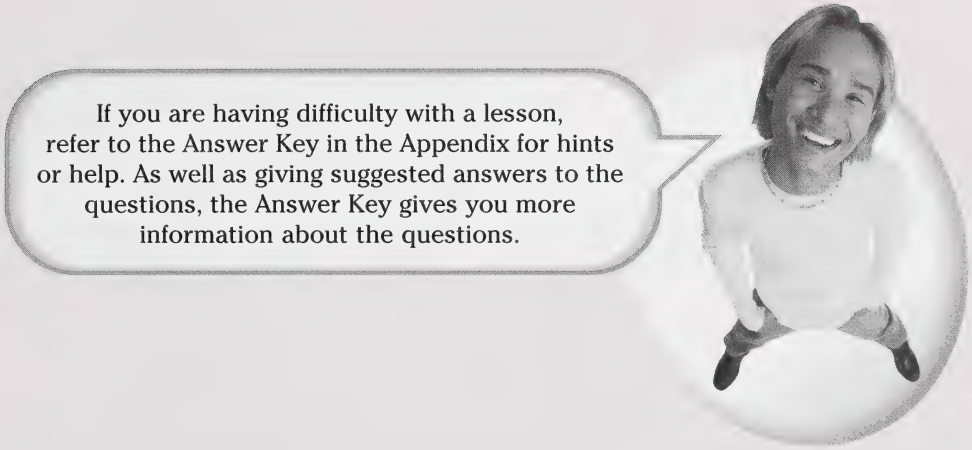
Refer to the textbook.

Use your calculator.

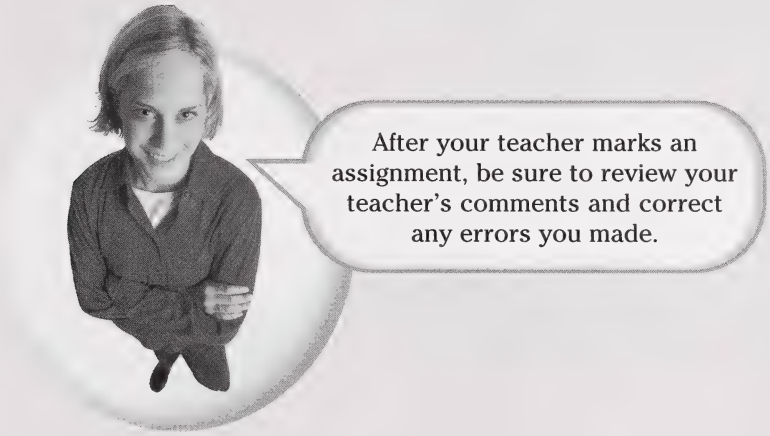
Use a spreadsheet program.

Assessment and Feedback

The Mathematics 24 course is carefully designed to give you many opportunities to discover how well you are doing. In every lesson you will be asked to turn to the Appendix to check your answers. Completing the lessons and comparing your answers to the suggested answers in the Appendix will help you understand math concepts, develop math skills, and improve your ability to communicate mathematically.

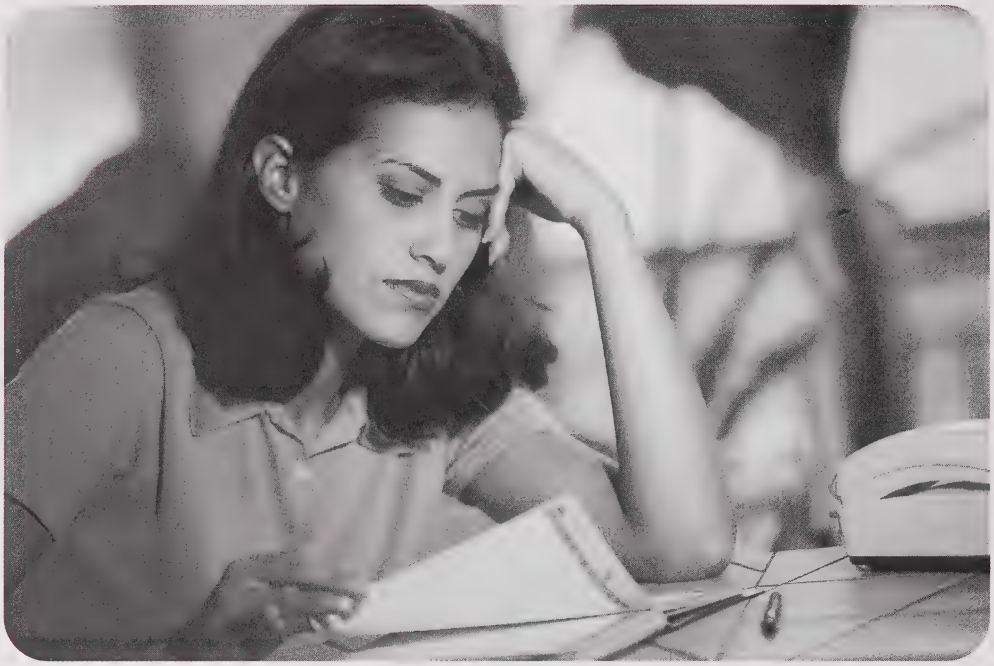

If you are having difficulty with a lesson, refer to the Answer Key in the Appendix for hints or help. As well as giving suggested answers to the questions, the Answer Key gives you more information about the questions.

Twice in each module you will be asked to give your teacher your completed assignments to mark. Your teacher will give you feedback on how you are doing.



There will be a Final Test at the end of the course. You can prepare for the Final Test by completing the Review at the end of each module.

MODULE OVERVIEW

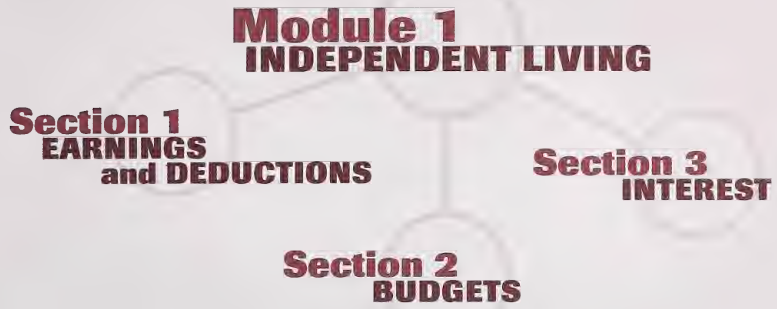


Do you know where you will be living or what you will be doing in five years? Maybe you will be studying for a career at a college or a technical institute. Maybe you will already be working full time and living independently in your own apartment.

Independent living carries with it a number of responsibilities. One of these responsibilities is saving for your future—putting money aside each payday for emergencies or for a house or new car.

Of course, if you are employed, some money may be automatically deducted from your pay each month for income taxes, the Canada Pension Plan, and Employment Insurance. What you have left over must be budgeted wisely to cover your expenses for accommodation, food, transportation, clothing, entertainment, and other miscellaneous costs.

In this module you will explore the costs of independent living. In particular, you will investigate interest on savings, income and deductions, and budgets.



Your mark on this module will be determined by how well you complete the two Assignment Booklets.

The suggested mark distribution is as follows. Be sure to check with your teacher if this mark allocation is valid for you. Some teachers like to include other reviews and assignments.

Assignment Booklet 1A

Section 1 Assignment	25 marks
Section 2 Assignment	25 marks

Assignment Booklet 1B

Section 3 Assignment	25 marks
Final Module Assignment	25 marks
Total	100 marks

When doing the assignments, work slowly and carefully. Be sure you attempt each part of the assignments. If you are having difficulty, you may use your course materials to help you, but you must do the assignments by yourself.

You will submit Assignment Booklet 1A to your teacher before you begin Section 3. You will submit Assignment Booklet 1B to your teacher at the end of this module.

All forms and tables and/or portions of forms and tables used in this document are reproduced from Canada Revenue Agency with the permission of the Minister of Public Works and Government Services Canada, 2004.

SECTION 1

Earnings and Deductions

Many young people have a part-time or full-time job. If you are one of these people, think about the following questions:

- On what basis is your pay determined?
- What deductions are made from your pay?
- How do these deductions benefit you?
- What is the total of these deductions?
- What is your take-home pay?

An understanding of how you are paid and the deductions from your pay will help you budget wisely.

In this section you will investigate various aspects of getting paid. You will discover that your net pay is not always the same amount you expect to be paid. You will analyze pay stubs to see what deductions are subtracted, and you will discover how to estimate these deductions.

LESSON 1

Earning an Income

In this lesson you will explore different ways employees are paid.

Dolores is a teacher at a First Nations elementary school. She is paid a **salary** for her services. She makes a set amount of pay per month over the school year. When a person receives a salary, there is usually no extra pay for working longer hours or for doing a superior job.

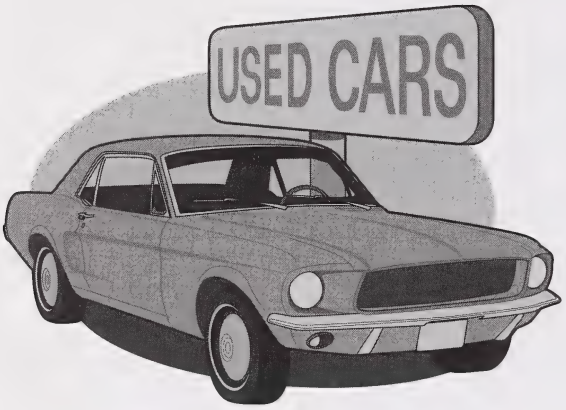
Dolores's husband, Tom, works as a mechanic. He receives an hourly **wage** and normally works an eight-hour day and a 40-hour week. His weekly wages are determined by multiplying the number of hours he works by his regular hourly wage. On days when he works over eight hours, in weeks when he works over 40 hours, or on occasions when he works on a holiday, he is paid overtime. His **overtime pay** is "time and a half" (1.5 times his regular hourly wage) for each overtime hour he works.

If you have access to the Internet, check the overtime regulations in your province or territory. In Alberta, search for *employment standards* from the Government of Alberta website or go to the following website:

http://www.gov.ab.ca/hre/employmentstandards/

Dolores's son, Tyler, works as a waiter at a restaurant. In addition to his regular hourly wage, he receives **gratuities**, or **tips**, from customers. Tips he and the other waiters receive are shared among all the employees of the restaurant according to a percentage allocation. Sometimes Tyler's tips for a shift are more than his wages.

Dolores's mother sews moccasins that are sold through a co-operative. She does not receive wages or a salary. Instead, she is paid for each pair of moccasins she sews. This method of payment is an example of **piecework**.



Dolores's sister, Muriel, is in sales at a car dealership. She is paid a base salary plus a **commission** on sales. As an incentive for the sales staff, the dealership pays a **graduated commission**. For sales above $100 000.00 per month, the commission is 2% higher than on the sales for the first $100 000.00.

As you can see, the members of Dolores's family are paid in different ways.

Now you will explore the methods for determining an employee's total earnings, or **gross pay**, in greater detail.

1. Turn to pages 7 to 9 in your textbook. Read the introduction to "Tutorial One: Your Job Earnings" on pages 7 and 8. Then do "Investigation: Earning Money" on pages 8 and 9.

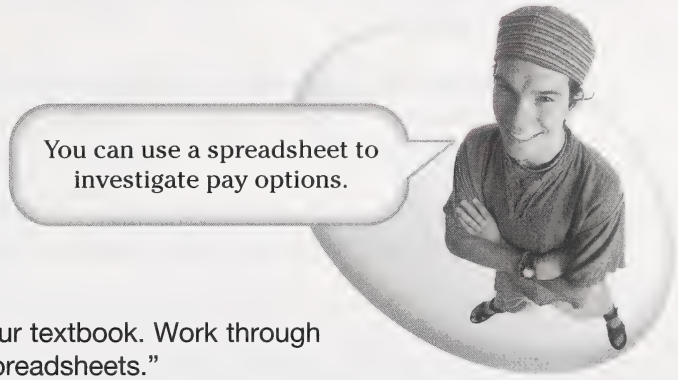
Check your answers on page 65 in the Appendix.

In the next set of examples and questions, you will analyze several scenarios involving wages and overtime, commissions, tips or gratuities, and piecework.

Turn to pages 10 and 11 in your textbook. Work through Examples 1 to 4.

2. Turn to pages 13 to 15 in your textbook. Do question 1 and questions 3 to 8 of "Put into Practice."

Check your answers on pages 66 to 68 in the Appendix.



Turn to page 12 in your textbook. Work through "Example 5: Using Spreadsheets."

The instructions given in this module are for Microsoft Excel for the Windows operating system. If you are using a different operating system or different software, you should consult your instruction manuals if differences arise. For specific instructions for formatting cells for currency, refer to page 124 in the Appendix.

3. In Example 5 in your textbook, what are the spreadsheet formulas for cell D3 and cells D4 through D9?

4. Turn to page 14 in your textbook. Do question 2 of "Put into Practice." (**Note:** Courtney's hourly rate should read $7.00, not $6.75.)

   There is a templated spreadsheet for this question on the multimedia CD. Use the file MOD_1_1.xlt in the Spreadsheets folder.

Check your answers on pages 68 and 69 in the Appendix.

In this lesson you analyzed a variety of ways employees are paid. If you have a job, which of these payment methods applies to you?

Turn to the Section 1 Assignment in Assignment Booklet 1A. Answer question 1.

LESSON 2

Lesson 2: Payroll Deductions

In this lesson you will investigate several deductions that reduce your take-home pay.

If you have flipped through the job ads and career sections of your newspaper and compared the advertised pay scales, you were comparing gross incomes, not take-home pay.

In this lesson you will analyze the various deductions taken off gross income and calculate the **net income**, or take-home pay, for a variety of employment situations.

STATEMENT OF EARNINGS

EMPLOYEE: Katherine Lee

EMPLOYEE NO.: 0001234 | SOCIAL INSURANCE NO.: 123 456 789 | PAY PERIOD: FROM July 16/03 TO July 31/03

EARNINGS	RATE	UNITS	AMOUNT
Regular	10.50	80.00	840.00
Overtime	15.75	3.00	47.25

DEDUCTIONS	CURRENT	YEAR TO DATE	OTHER DEDUCTIONS	AMOUNT
CPP	37.26	223.56	Group Insurance	10.01
EI	18.63	111.78	United Fund	2.25
Income Tax	115.00	690.00	Professional Dues	13.31
			RRSP	44.36
			Payroll Savings Plan	37.50

GROSS INCOME: $887.25 | TOTAL DEDUCTIONS: $278.32 | NET INCOME: $608.93

The statement of earnings above is for Katherine, a nursing assistant at a hospital. This statement shows Katherine's gross pay for the last two weeks in July, the **basic deductions** set by the federal government, her personal deductions, the total of all her deductions, and her net pay.

Use Katherine's statement of earnings to answer question 1.

1. **a.** List the basic deductions and calculate the total of these deductions.

   b. What percent of Katherine's gross income are these basic deductions? Round your answer to the nearest tenth of one percent.

2. Give one reason why an employer may want to list personal deductions separately from the basic deductions.

3. What other personal deductions might appear on a pay statement?

4. Explain how net pay is determined.

5. Turn to page 20 in your textbook. Do questions 1 and 2 of "Investigation: Pay Deductions." (You don't need to copy the pay stubs for these questions. You only need to find the net pay and the net pay YTD.)

Check your answers on pages 69 and 70 in the Appendix.

Turn to pages 18 and 19 in your textbook. Read these pages to discover more about basic deductions.

Canada Pension Plan

The Canada Pension Plan (CPP) is a federal plan established to provide workers with retirement income, disability income, or income for their family if they die. Workers who are 18 years of age or older must contribute to the plan. Your contributions are based on your income. Your retirement benefits, usually starting at age 65, are based on your past contributions.

There are no contributions on the first $3500.00 of your income, and your maximum contribution for the year is $1801.80. Your contributions and your employer's contributions are the same.

In 2003 the combined rate was 9.9%. Your contributions would be 9.9% ÷ 2, or 4.95%, of your annual income over $3500.00.

Since the textbook was printed, the rates used to calculate CPP contributions and EI premiums have changed. The tax brackets have also changed. For this course, use the values in the following tables unless otherwise directed. They match the included 2003 income tax forms.

The following rates are for the 2003 tax year. (**Note:** The Alberta income tax rate is 10%.)

DEDUCTION RATES

Deduction	Rate (%)
Canada Pension Plan Contribution (Maximum payable amount is $1801.80.)	4.95
Employment Insurance Premium (Maximum payable amount is $819.00.)	2.1

FEDERAL INCOME TAX RATES

Taxable Income	Percentage (%)
$0 up to $32 183	16
more than $32 183 up to $64 368	22
more than $64 368 up to $104 648	26
more than $104 648	29

Example

Jasmine earns a monthly salary of $1999.95. Calculate her monthly CPP contribution based on 2003 rates.

Solution

Jasmine's annual salary is $12 \times \$1999.95 = \$23\ 999.40$.

Her total annual contribution is based on $\$23\ 999.40 - \$3500.00 = \$20\ 499.40$.

$$4.95\% \text{ of } \$20\ 499.40 = 0.0495 \times \$20\ 499.40$$
$$= \$1014.72$$

This is correct because it is less than the annual maximum of $1801.80.

Jasmine's monthly contribution is $\$1014.72 \div 12 = \$84.56$.

If you have access to the Internet, you can find out more about the Canada Pension Plan from the Human Resources Development Canada website:

http://www.sdc.gc.ca/en/isp/cpp/cpptoc.shtml

Employment Insurance

Employment insurance (EI) is a federal plan designed to assist workers who lose their jobs. The 2003 EI premium for employees is 2.1% of their annual income up to but not exceeding $39 000.00. The maximum annual premium is $819.00.

Example

Using the information from the previous example, calculate Jasmine's monthly EI premium.

Solution

Jasmine's annual income is $23 999.40.

Her annual EI premium rate is 2.1%.

$$2.1\% \text{ of } \$23\ 999.40 = 0.021 \times \$23\ 999.40$$
$$= \$503.99$$

This is correct because it is less than the annual maximum of $819.00.

Jasmine's monthly contribution is $\$503.99 \div 12 = \$42.00$.

Example

Alecia is paid $2105.75 biweekly (every two weeks).

a. Calculate her biweekly CPP contribution based on 2003 rates.
b. Calculate her biweekly EI premium.

Solution

There are 52 weeks in a year. Since $52 \div 2 = 26$, there will be 26 biweekly pay periods in one year. Alecia's annual salary is $26 \times \$2105.75 = \$54\,749.50$.

a. Her total annual CPP contribution is based on $\$54\,749.50 - \$3500.00 = \$51\,249.50$.

$$4.95\% \text{ of } \$41\,249.50 = 0.0495 \times \$41\,249.50$$
$$= \$2536.85$$

This is more than the annual maximum of $1801.80. In this case, Alecia will have biweekly contributions of $104.23.

$$4.95\% \text{ of } \$2105.75 = 0.0495 \times \$2105.75$$
$$= \$104.23$$

The deductions will stop when the maximum amount is reached. The rest of her paycheques for the year will have no CPP contributions deducted from them. Since $\$1801.80 \div \$104.23 = 17.286\,769\,4$, her first seventeen paycheques will have the full $104.23 deduction. Her eighteenth paycheque will have the remaining $29.89 deducted for CPP. The nineteenth through twenty-sixth cheques will have no CPP deduction.

b. The EI premium rate for 2003 is 2.1% of income, up to a maximum payment of $819.00.

$$2.1\% \text{ of } \$54\,479.50 = 0.021 \times \$54\,479.50$$
$$= \$1144.07$$

This is more than the yearly maximum of $819.00. In this case, Alecia will have biweekly premiums of $44.22.

$$2.1\% \text{ of } \$2105.75 = 0.021 \times \$2105.75$$
$$= \$44.22$$

Alecia's EI deductions will stop when the maximum amount is reached. The rest of her paycheques will have no EI premiums deducted. Since \$819.00 ÷ \$44.22 = 18.521 031 21, her first eighteen paycheques will have the full \$44.22 deduction. Her nineteenth paycheque will have the remaining \$23.04 deducted. Her twentieth through twenty-sixth paycheques will have no EI premium deducted.

Both CPP and EI rates are subject to change from year to year. For current rates and formulas, check the Canada Revenue Agency website:

http://www.cra.gc.ca/tax/business/topics/payroll/calculating/menu-e.html

The Canada Revenue Agency was formerly called the Canada Customs and Revenue Agency. In December 2003 the customs program became part of the new Canada Border Services Agency.

6. Dempsey earns a salary of \$2350.00 a month. Calculate his monthly CPP contributions and EI premiums using the techniques outlined in the previous examples.

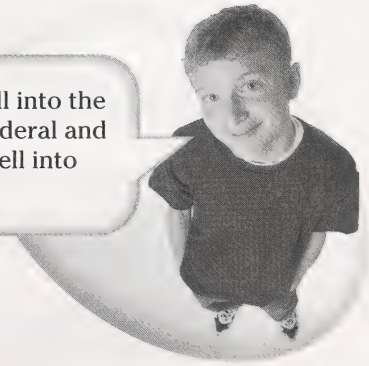
Check your answer on page 70 in the Appendix.

Income Tax

Another basic deduction is income tax. Income tax is collected by both the provincial and federal governments. Federal income tax is a graduated or progressive tax, which means the more you earn, the higher the rate of tax you pay.

Turn to page 19 in your textbook. Read the information about income tax and taxable income. Then work through "Example 1: Calculation of Net Earnings Using Tax Rates" on page 21 in your textbook.

In the previous example, the taxable income fell into the first category. How would you determine the federal and provincial income tax if the taxable income fell into a higher category?



Example

Sasha's taxable income is $52 567.00. Use the information in the tables on page 18 in this Student Module Booklet to estimate his federal and provincial taxes and his monthly tax deduction.

Solution

Sasha's taxable income falls in the second category: $32 183.01 to $64 368.00.

The federal tax rate on his first $32 183.00 of taxable income is 16%.

$$16\% \text{ of } \$32\,183.00 = 0.16 \times \$32\,183.00$$
$$= \$5149.28$$

The federal tax rate on the amount of his income in the second category is 22%. You must find 22% of the difference between his taxable income, $52 567.00, and $32 183.00.

The amount in the second category is $52 567.00 – $32 183.00 = $20 384.00.

$$22\% \text{ of } \$20\,384.00 = 0.22 \times \$20\,384.00$$
$$= \$4484.48$$

Sasha's total federal tax is $5149.28 + $4484.48 = $9633.76.

Sashas's provincial tax is 10% of his taxable income.

$$10\% \text{ of } \$52\,567.00 = 0.10 \times \$52\,567.00$$
$$= \$5256.70$$

Round your answer to the nearest cent.

Sasha's total tax payable is $9633.76 + $5256.70 = $14 890.46.

Sasha's monthly deduction for income tax is $14 890.46 ÷ 12 = $1240.87.

7. Turn to page 25 in your textbook. Do questions 2, 3.a., and 5 of "Put into Practice." Use the examples you've studied so far in this module to help you calculate any CPP contributions and EI premiums.

Check your answers on pages 70 to 72 in the Appendix.

If you filed an income tax return in the past, you may be familiar with the income tax forms that allow you to determine the exact amount of tax payable. In the next examples you will examine two scenarios involving some of the main elements of a tax return.

If you have access to the Internet, you can download a complete tax form for your province or territory at the Canada Revenue Agency website:

http://www.cra.gc.ca

Turn to pages 22 to 24 in your textbook. Work through "Example 2: Using Canada Customs and Revenue Agency Forms."

Example

Katherine is a nursing assistant who lives in Alberta. At the beginning of this lesson, you were given one of Katherine's pay stubs for two weeks in July 2003. Assuming her pay and deductions were the same for the rest of the year, estimate her annual income tax and any additional tax payable or refund due using the provided income tax forms and the following information:

- Katherine's annual salary is $26 \times \$887.25 = \$23\ 068.50$.
- Her annual CPP contribution is $26 \times \$37.26 = \$968.76$.
- Her annual EI premium is $26 \times \$18.63 = \$484.38$.
- Her annual Group Insurance is $26 \times \$10.01 = \$260.26$.
- Her annual professional dues are $26 \times \$13.31 = \$346.06$.
- Her annual RRSP contribution is $26 \times \$44.36 = \$1153.36$.
- Her annual payroll savings are $26 \times \$37.50 = \$975.00$.
- The total income tax deducted is $26 \times \$115.00 = \$2990.00$.

Remove the completed 2003 tax package for Katherine from the Appendix. Refer to the forms as you work through the following steps.

The tax example on the multimedia CD will also walk you through filling in the tax forms for Katherine. It is an alternative way for you to follow the necessary steps. You still need to fill in the paper copies of the forms even if you refer to the multimedia CD for the instructions.

Step 1: Complete page 2 of the T1 General Form.

- On line 101, enter $23 068.50, Katherine's employment income.
- On line 150, enter $23 068.50, her total income.

Step 2: Complete page 3 of the T1 General Form.

- On line 150, enter $23 068.50. This is the same amount as on line 150 of page 2.
- On line 208, enter $1153.36, her RRSP contribution.
- On line 212, enter $346.06, her professional dues.
- Do not enter her CPP contribution on line 222. This line is for self-employed earnings. Katherine was not self-employed.
- On line 233, enter the total $1499.42. Also enter $1499.42 in the box to the right of line 233, as indicated by the ►.
- On lines 234, 236, and 260, enter $21 569.08. This is the difference between line 150 and line 233. It is Katherine's taxable income.

Step 3: Complete Schedule 1 to estimate Katherine's tax credits and federal tax.

- On line 1, enter $21 569.08. This is the same amount as on line 150 on page 3 of the T1 General Form.
- Complete lines 2 to 8 as shown. Katherine's tax rate is 16% since her taxable income is $32 183.00 or less. $21 569.08 $\times$ 0.16 = $3451.05
- On line 300, enter $7756.00. All taxpayers are entitled to claim the basic personal amount.
- On line 308, enter $968.76. This is Katherine's CPP contribution.
- On line 312, enter $484.38. This is her annual EI premium.
- On line 335, enter $9209.14, the sum of lines 300, 308, and 312.
- On lines 338 and 350, enter $1473.46. $9209.14 $\times$ 0.16 = $1473.46
- On line 9, transfer $3451.05 from line 8. This is also the amount on line 11. (**Note:** There are two boxes to fill in for line 11.)
- Enter $1473.46 on lines 350 and 12. (**Note:** There are two boxes to fill in for line 12.)

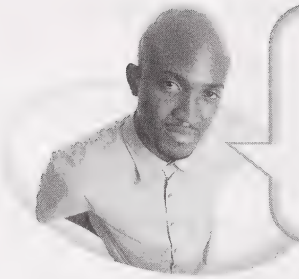
- On line 13, enter $1977.59. This is the difference between lines 11 and 12.
- On lines 15 and 19, transfer the value $1977.59 from line 13.

Step 4: Complete the Alberta Tax and Credits form.

- On line 1, enter $21 569.08, transferred from line 260.
- On lines 3 and 5, enter $2156.91. $0.10 \times \$21\ 569.08 = \$2156.91$
- On line 6, claim the basic personal amount, $13 525.00.
- On line 11, enter $968.76, transferred from line 308 of Schedule 1.
- On line 13, enter $484.38, transferred from line 312 of Schedule 1.
- On line 27, enter $14 978.14, the sum of lines 6, 11, and 13.
- On lines 29 and 33, enter $1497.81. $0.10 \times \$14\ 978.14 = \$1497.81$ (**Note:** There are two boxes to fill in for line 33.)
- On line 34, enter $659.10, the difference between lines 5 and 33.
- On lines 34, 39, 41, 43, and 48, enter $659.10 as well.

Step 5: Complete page 4 of the T1 General Form.

- On line 420, enter $1977.59, the federal tax owing.
- On line 428, enter $659.10, the Alberta tax owing.
- On line 435, enter $2636.69, the total tax owing.
- On lines 437 and 482, enter $2990.00, the total tax Katherine paid through payroll deductions. (**Note:** There are two boxes to fill in for line 482.)
- When you subtract line 482 from line 435, you will see that Katherine contributed $353.31 too much and should receive this amount as a refund. Enter –353.31 below line 482. Enter 353.31 on line 484.



If you are employed, each February you will receive a statement called a T4 slip from your employer. The T4 slip summarizes your income and deductions for the previous tax year. You will use this slip to complete your income tax return to determine if you will have to pay more income tax or if you will receive a refund.

8. Use the following T4 slip and the procedures outlined in the previous examples to determine Daniel's tax owing or his refund due. Use the blank tax forms provided in the Appendix.

Employer's name – Nom de l'employeur
George's Auto
1234 - 56 St.
Yourtown, AB
T5L 4X2

Canada Customs and Revenue Agency / Agence des douanes et du revenu du Canada

Year / Année 2003

T4
STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

VOID / ANNULÉ

Box		
14	Employment income – line 101 / Revenus d'emploi – ligne 101	14995 .82
22	Income tax deducted – line 437 / Impôt sur le revenu retenu – ligne 437	2249 .40
54	Business Number / Numéro d'entreprise	
10	Province of employment / Province d'emploi	AB
16	Employee's CPP contributions – line 308 / Cotisations de l'employé au RPC – ligne 308	463 .97
24	EI insurable earnings / Gains assurables d'AE	
12	Social insurance number / Numéro d'assurance sociale	654 321 012
28	Exempt – Exemption CPP - QPP / EI / RPC - RRQ / AE	
29	Employment Code / Code d'emploi	
17	Employee's QPP contributions – line 308 / Cotisations de l'employé au RRQ – ligne 308	
26	CPP-QPP pensionable earnings / Gains donnant droit à pension - RPC-RRQ	9373 .19
18	Employee's EI premiums – line 312 / Cotisations de l'employé à l'AE – ligne 312	314 .91
44	Union dues – line 212 / Cotisations syndicales – ligne 212	360 .00
20	RPP contributions – line 207 / Cotisations à un RPA – ligne 207	
46	Charitable donations – Schedule 1 / Dons de bienfaisance – Annexe 1	
52	Pension adjustment – line 206 / Facteur d'équivalence – ligne 206	
50	RPP or DPSP registration number / N° d'agrément d'un RPA ou d'un RPDB	

Employee's name and address – Nom et adresse de l'employé

Last name (in capital letters) – Nom de famille (en lettres majuscules) / First name – Prénom / Initials – Initiales

BEAVER DANIEL A.
P.O. Box 567
Yourtown, AB
T5L 301

Other information (see the back) / Autres renseignements (voir au verso)

Box – Case / Amount – Montant / Box – Case / Amount – Montant

Box – Case / Amount – Montant / Box – Case / Amount – Montant / Box – Case / Amount – Montant / Box – Case / Amount – Montant

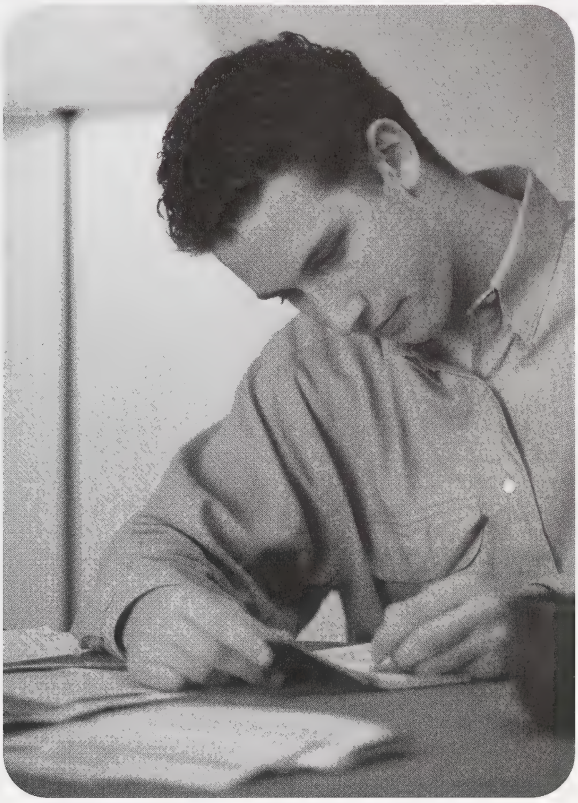
T4 (01)

Check your answers on pages 72 to 79 in the Appendix.

In this lesson you examined payroll deductions and how to complete tax forms.

Turn to the Section 1 Assignment in Assignment Booklet 1A. Answer question 2.

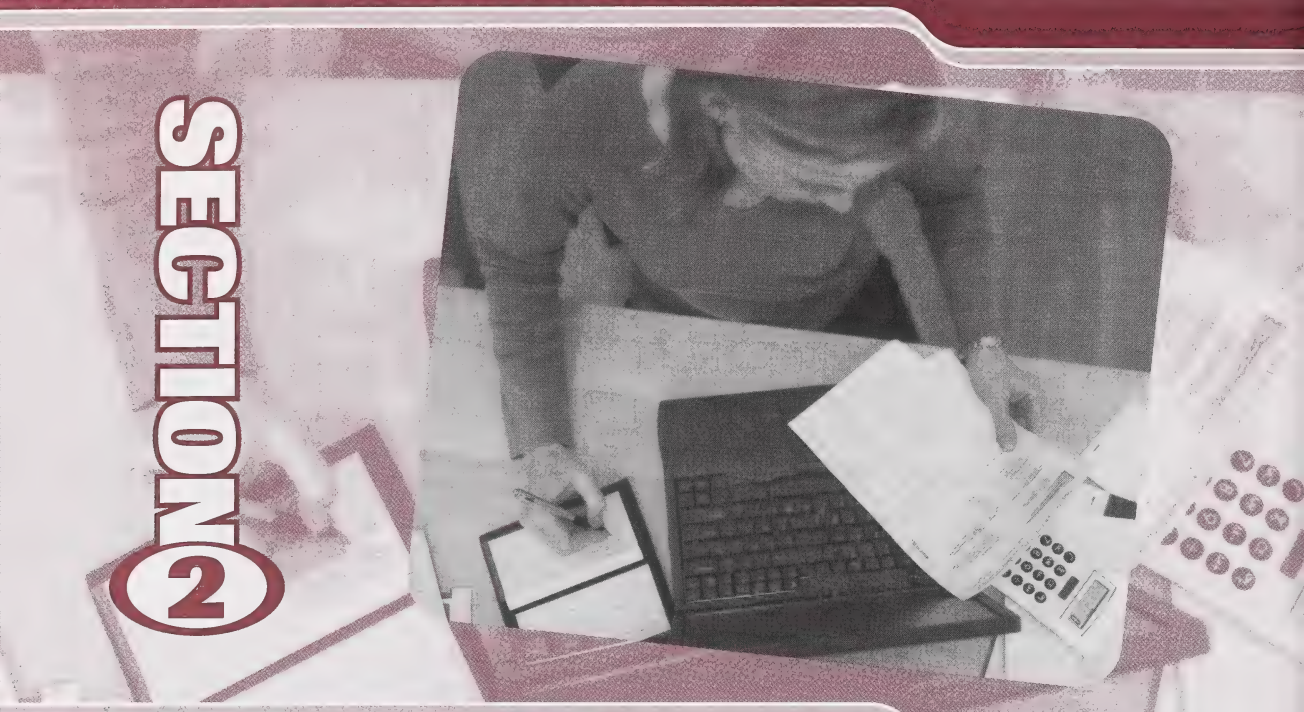
CONCLUSION



In this section you investigated various aspects of getting paid. You discovered that your net pay is not always the same amount you expect to be paid. You analyzed pay statements to see what deductions are subtracted and you discovered how to estimate these deductions.

Also, you explored income tax and how to use income tax forms to estimate federal and provincial amounts.

Did you know that even if your annual income is not high enough to pay income tax, it is still important to file an income tax return? The amount you can contribute to a RRSP is tied to the income you report on your return. These amounts can be carried forward to future years when your income is significantly higher. At that time, you can contribute the accumulated amount to a RRSP, not only to save for your future but also to reduce your taxable income and reduce the taxes you would have to pay!



SECTION 2

Budgets

Part of the planning process for businesses and governments involves carefully preparing annual budgets. These budgets not only try to balance income and expenditures, they also outline on what items their resources will be spent.

If you are thinking about moving out on your own, you can probably benefit by preparing a budget. The costs involved with consumer credit, accommodation, owning and operating a vehicle, and daily expenses can be very high. When starting off on your own, you need to be cautious about how much money you spend on necessities and luxuries. You must budget your money wisely.

In this section you will investigate some of the costs involved with living on your own. You will explore banking and credit and you will develop budgeting skills. As well, you will compare the prices of different items and assess how to spend your money wisely.

LESSON 1

Budgeting for Expenses

In this lesson you will explore how to prepare a budget to meet expenses.

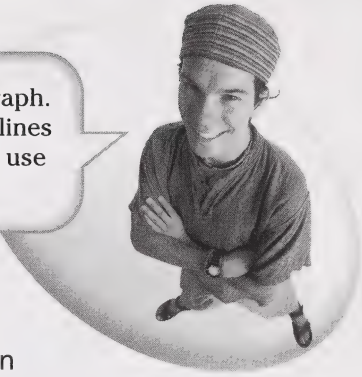
Carl works for a construction company. Last month he moved into his own apartment. Carl is examining some of the bills he has paid. These bills include rent, electricity (hydro), car payment, credit card payment, and auto insurance.

Some expenses are **monthly fixed expenses**—amounts that change little from month to month. Some expenses are **monthly variable expenses**—amounts that change from month to month, such as amounts for groceries, entertainment, and car repairs. A few expenses are **annual expenses**, such as apartment insurance, car registration, vacations, and birthday gifts.

Carl realizes that he must prepare a **budget** to plan how he can meet his expenses and still save a bit of money each month. What should Carl include in his budget?

Turn to pages 27 and 28 in your textbook. Read from the top of page 27 to the bottom of page 28.

One way to visualize a budget is to create a circle graph. In the next example, you will enter the budget guidelines from page 28 in your textbook in a spreadsheet and use the spreadsheet to draw a circle graph.



Example

Create a circle graph using the budget guidelines on page 28 in your textbook.

Step 1: Open a new spreadsheet.

Step 2: Enter the data in columns A and B.

	A	B
1	**Category**	**Percent of Monthly Income**
2	Housing	30
3	Utilities	5
4	Transportation	16
5	Food	18
6	Clothing	5
7	Health and Personal Care	5
8	Entertainment	5
9	Savings	5
10	Miscellaneous	11
11		

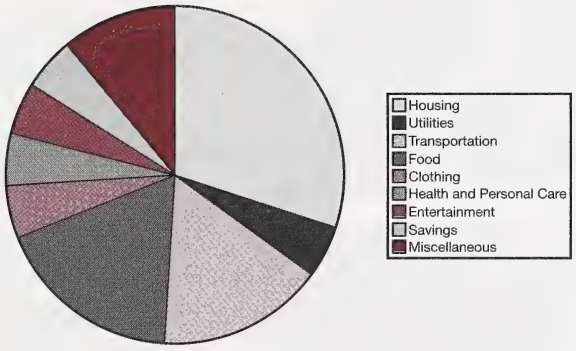
Step 3: Click on the Chart Wizard icon in the tool bar. You can also use the Insert menu and scroll down to Chart to start making your circle graph.

Step 4: Select Pie from the list of graph types, and then click on Finish. A graph will appear on the screen. (If it doesn't, select cells A1 to B10 by clicking on cell A1 and dragging to cell B10. Then repeat Steps 3 and 4.)

There is a copy of this spreadsheet, called Mod_1_2.xlt, on the multimedia CD. It is in the Spreadsheets folder. If you use it, you will have to select cells A1 to B10 before using the Chart Wizard.

Step 5: Resize the graph if necessary.

	A	B	C	D
1	**Category**	**Percent of Monthly Income**		
2	Housing	30		
3	Utilities	5		
4	Transportation	16		
5	Food	18		
6	Clothing	5		
7	Health and Personal Care	5		
8	Entertainment	5		
9	Savings	5		
10	Miscellaneous	11		



Next you will practise analyzing budgets using the budget guidelines from the previous example.

Turn to pages 29 to 31 in your textbook. Work through Example 1.

1. Turn to pages 35 to 38 in your textbook. Do questions 1, 2, 4, and 7 of "Put into Practice."

Check your answers on page 80 in the Appendix.

Next you will use your spreadsheet skills to analyze budgets.

Turn to pages 32 to 34 in your textbook. Work through Example 2.

You can make a circle graph or pie chart from two columns in a multicolumn spreadsheet. Here is a quick example.

Select the first column by clicking in cell A4 and dragging down to cell A12. Release the mouse.

	A	B	C	D	E	F
1	**Wellman Monthly Budget**					
2		**Current Budget**			**New Budget**	
3	Category	Amount ($)	Amount (%)	Guideline (%)	Amount (%)	Amount ($)
4	Housing/Mortgage	950	27	30	35.5	1250
5	Utilities	296		5		
6	Food	700		18		
7	Transportation	650		16		
8	Entertainment	300		5		
9	Clothing	250		5		
10	Health and Personal Care	175		5		
11	Savings	100		5		
12	Miscellaneous	100		11		
13		3521	27	100	35.5	1250

Select the other column by pressing and holding the Ctrl key on the keyboard, followed by clicking in cell D4 and dragging down to cell D12. Release the mouse and the Ctrl key.

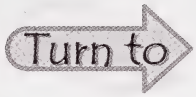
	A	B	C	D	E	F
1	**Wellman Monthly Budget**					
2		**Current Budget**			**New Budget**	
3	Category	Amount ($)	Amount (%)	Guideline (%)	Amount (%)	Amount ($)
4	Housing/Mortgage	950	27	30	35.5	1250
5	Utilities	296		5		
6	Food	700		18		
7	Transportation	650		16		
8	Entertainment	300		5		
9	Clothing	250		5		
10	Health and Personal Care	175		5		
11	Savings	100		5		
12	Miscellaneous	100		11		
13		3521	27	100	35.5	1250

You now have two columns selected. Click on the Chart Wizard icon. Now just continue as if there were only two columns in the spreadsheet. Choose Pie in the Chart Wizard and click on the Finish button.

2. Turn to pages 36 to 39 in your textbook. Do questions 3, 5, 6, and 8 of "Put into Practice." (You might find the template spreadsheets Mod_1_3.xlt, Mod_1_4.xlt, and Mod_1_5.xlt in the Spreadsheets folder on the multimedia CD useful here.)

Check your answers on pages 81 to 85 in the Appendix.

In this lesson you examined budgets using budget guidelines and spreadsheet software. As part of your analysis, you used the graphing feature of your spreadsheet software.



the Section 2 Assignment in Assignment Booklet 1A. Answer questions 1 and 2.

LESSON 2

Shopping at Home and Abroad

In this lesson you will explore comparison shopping and foreign currencies.

Josef wants to buy a car stereo. He reviewed his budget and found that he spends a large amount of money on food. He has been shopping at a nearby food store and wonders how prices there compare to the prices at several large supermarkets.

Mangoes are Josef's favourite fruits. He found that the price of mangoes is 6 for $4.99 at one supermarket, 10 for $8.99 at another supermarket, and $1.09 each at the food store where he usually shops.

In order to determine whether he can save some money by shopping at a supermarket, Josef has to compare **unit costs**—the costs of single items.

1. Turn to page 43 in your textbook and work through Example 1. Then complete "Investigation 1: Calculate Again."

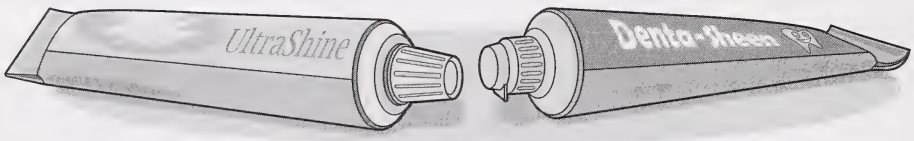
Check your answers on page 86 in the Appendix.

For many items that are sold in millilitres or grams, unit prices are often expressed in terms of 100 mL or 100 g.

Example

Two different brands of toothpaste are advertised in a sale flyer.

UltraShine sells at $1.59 for 150 mL. Denta-Sheen sells at $1.49 for 130 mL. Which is the better buy?



Solution

Use your calculator to find the price of 100 mL of each brand.

UltraShine Toothpaste

First find the price of 1 mL and then multiply that price by 100.

$\$1.59 \div 150 = \$0.0106/\text{mL}$ $\quad \$0.0106 \times 100 = \$1.06/100\ \text{mL}$

It is easy to see why the unit cost is in terms of 100 mL. $1.06/100 mL is easier to understand than $0.0106/mL.

Another way to find the cost of 100 mL is to divide by 1.5 because 150 mL ÷ 1.5 = 100 mL.

$\$1.59 \div 1.5 = \$1.06/100\ \text{mL}$

UltraShine toothpaste sells for $1.06/100 mL.

Denta-Sheen Toothpaste

Because 130 mL ÷ 1.3 = 100 mL, divide $1.49 by 1.3.

$1.49 ÷ 1.3 = $1.146 153 846

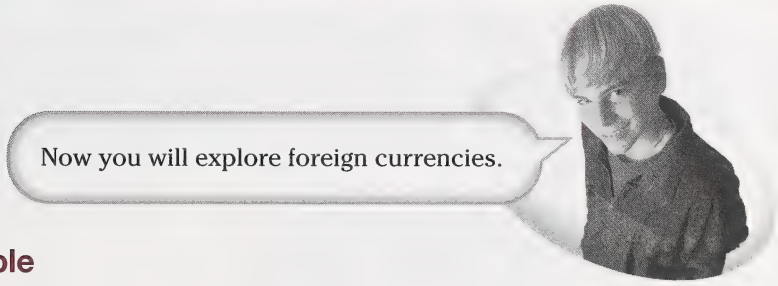
Denta-Sheen toothpaste sells for about $1.15/100 mL.

Therefore, UltraShine toothpaste is the better buy.

2. Turn to pages 44 and 45 in your textbook. Do questions 1 to 5 of "Put into Practice."

3. Do you remember Josef from the introduction to Lesson 2? He was trying to decide where to buy mangoes. Which store should Josef go to get the best buy for mangoes?

Check your answers on pages 86 and 87 in the Appendix.



Example

Darla spent a month with her cousins in North Dakota. Before her trip, she converted 350 Canadian dollars to American currency. At the time, she received $0.705 in American currency for each Canadian dollar. While she was in the United States, Darla spent $100 in American currency. On her return to Canada, Darla changed her remaining American currency to Canadian dollars. The exchange rate was 1.594 Canadian dollars for 1 American dollar. How much money, in Canadian dollars, did Darla return home with? How much did she spend altogether?

Solution

Step 1: Convert 350 Canadian dollars to American dollars.

Can$350 × 0.705 = US$246.75

Step 2: Determine how much Darla had after spending US$100.00.

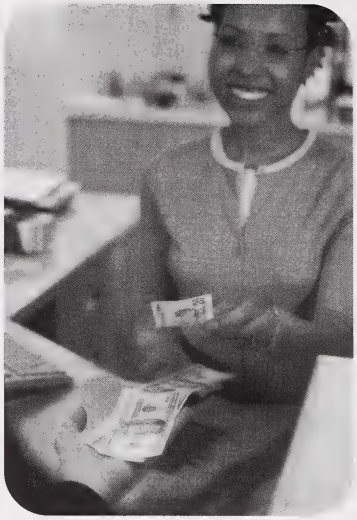
US$246.75 – US$100.00 = US$146.75

Step 3: Convert US$146.75 to Canadian dollars.

US$146.75 × 1.594 = Can$233.9195

Darla returned home with $233.92 in Canadian currency.

She spent $350.00 – $233.92 = $116.08 in Canadian dollars.



An **exchange rate** is a ratio for converting one currency to another.

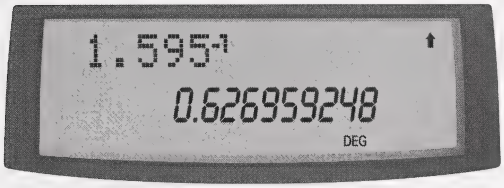
You can find the current exchange rates and information about how exchange rates are determined at the Bank of Canada website:

http://www.bankofcanada.ca/

Example

Trent looked up the exchange rate for converting Euros to Canadian dollars. The exchange rate was quoted as being 1.595. That means €1 = Can$1.595, or $\frac{€1.00}{Can\$1.00} = 1.595$.

To find the exchange rate for converting Canadian dollars to Euros, you can use the x^{-1} key on your calculator. Press the following keys.



Therefore, $\frac{\text{Can\$1.00}}{€1.00} = 0.627$.

Problems that deal with exchange rates require you to solve equations that contain ratios.

Looking Back

How do you solve an equation involving two ratios when one of the ratios has an unknown term?

Example

Solve this ratio.

$$\frac{x}{4} = \frac{18}{24}$$

Multiply both sides of the equation by 4.

$$4 \times \frac{x}{4} = \cancel{4}^{1} \times \frac{18}{\cancel{24}_{6}}$$

$$x = 3$$

Turn to page 45 in your textbook. Work through Example 2.

4. Turn to pages 46 and 47 in your textbook. Do questions 6 to 10 of "Put into Practice."

Check your answers on pages 88 to 90 in the Appendix.

In this lesson you explored unit costs and exchange rates.

Turn to the Section 2 Assignment in Assignment Booklet 1A. Answer question 3.

LESSON 3

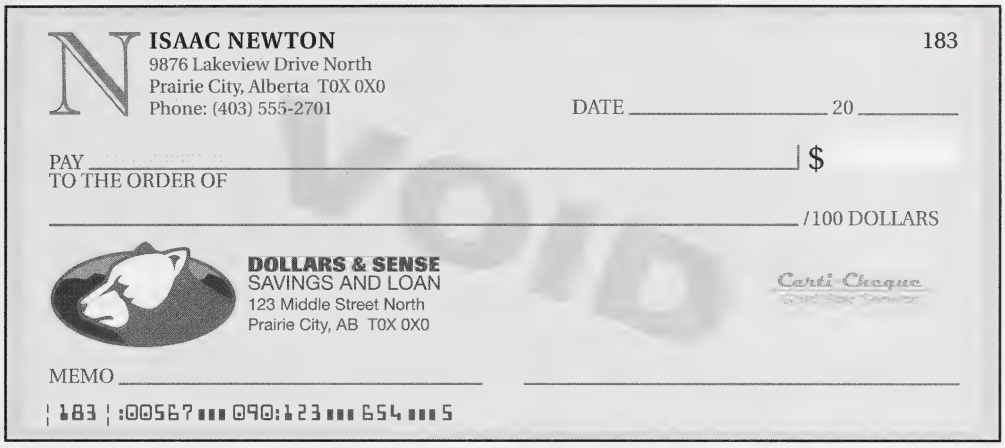
Banking

In this lesson you will explore writing cheques and maintaining up-to-date records of your banking transactions and account balances.

Whether you follow a budget or not, you must monitor your bank account and credit card balances. If you have a bank account on which you write cheques or make purchases using a debit card, you should enter these transactions in your personal record book. Keeping track of your balances can save you the embarrassment of having a cheque bounce or a purchase denied. Did you know that it is an offence to knowingly write a cheque on an account with insufficient funds?

To help you keep current, you can print a transaction summary from your computer if you have on-line access to your bank accounts, or you can print a transaction summary from most bank machines. Also, your bank will mail you a monthly account statement that summarizes all your transactions for the previous month.

Even if you use a debit card or a credit card for most of your purchases, there are times when you will need to write a cheque. Also, if you pay your utilities or other bills by having funds automatically withdrawn from your bank account, you will be asked to provide a cheque marked "void" to each company or utility provider that makes withdrawals from your account. As well, if your employer deposits your pay directly into your account, your employer may request a void cheque to determine the necessary account details.



To find out more about bank accounts and writing cheques, read on!

Turn to pages 48 to 51 in your textbook. Read these pages and work through "Example 1: Deposits."

1. Turn to page 51 in your textbook. Do question 1 of "Investigation: Writing Cheques."

Check your answers on pages 90 and 91 in the Appendix.

Most banks send you a monthly summary of your cheques and other transactions. Next you will explore how you can reconcile your monthly bank statement with your personal record book.

Example

Hera opened a new chequing account on October 1, 2003. She deposited $1000.00 into this account. On November 4 she received a statement of all the transactions that cleared her chequing account in the month of October.

The term **debit** means a withdrawal from an account. The term **credit** means a deposit into an account.

DOLLARS & SENSE
SAVINGS AND LOAN
123 Middle Street North
Prairie City, AB
T0X 0X0
TEL. (403) 555-1010

DOLLARS & SENSE
SAVINGS AND LOAN

Statement Plus
Gold Star Service

ACCOUNT STATEMENT

Hera R. Rajah
9876 Banting Way
Prairie City, AB
T0X 0X0

Transit / Account No.	Statement Period	Enclosed Items	Page
0XXXX X0X0XX	01 Oct 2003 to 31 Oct 2003	2	1

Date	Description	Debits	Credits	Balance
Oct 1	Deposit		1000.00	1000.00
Oct 3	Cheque 001	550.00		450.00
Oct 4	Direct Debit	65.00		385.00
Oct 15	Cheque 002	216.52		168.48
Oct 22	Preauthorized Debit	49.17		119.31
Oct 25	Instant Teller Deposit		200.00	319.31
Oct 25	Direct Debit	123.42		195.89
Oct 31	Service Charge	9.50		186.39

Hera noticed that the balance on her bank statement did not match the balance in her personal record book. In her record book Hera used the following abbreviations for the types of transactions:

- **D** – Deposit
- **DC** – Debit Card
- **ABM** – Automatic Bank Machine
- **PAP** – Preauthorized Payment

Hera checked off all the transactions in her record book that also appeared on the bank statement.

D - DEPOSIT DC - DEBIT CARD ABM - TELLER MACHINE PAP - PREAUTHORIZED PAYMENT TT - TELEPHONE TRANSFER O - OTHER

DATE	CHEQUE NUMBER	TRANS TYPE	DESCRIPTION OF TRANSACTION	PAYMENT/DEBIT (-)	✓	DEPOSIT/CREDIT (+)	BALANCE FORWARD
Oct.1		D	deposit		✓	1000 00	1000 00
Oct.1	001		Rentstar Management October rent	550 00	✓		-550 00 450 00
Oct.4		DC	Grocery Mart food	65 00	✓		-65 00 385 00
Oct.12	002		Clothesland jeans & shoes	216 52	✓		-216 52 168 48
Oct.22		PAP	Ring-a-Ling Ltd. phone bill	49 17	✓		-49 17 119 31
Oct.24	003		Good Heart Fund donation	10 00			-10 00 109 31
Oct.25		ABM	deposit tax refund		✓	200 00	+200 00 309 31
Oct.25		DC	Grocery Mart food	123 42	✓		-123 42 185 89
Nov.1		D	deposit paycheque			1500 00	+1500 00 1685 89
Nov.3		ABM	cash	200 00			-200 00 1485 89
Nov.3	004		Rentstar Management November rent	550 00			-550 00 935 89

D - DEPOSIT DC - DEBIT CARD ABM - TELLER MACHINE PAP - PREAUTHORIZED PAYMENT TT - TELEPHONE TRANSFER O - OTHER

What should Hera do to reconcile the bank statement with her personal record book?

Step 1: Check which items on the bank statement do not appear in Hera's record book.

Hera has not listed the service charges. She should enter another line below her last entry in her record book.

Oct.31			service charge	9 50	✓		-9 50 926 39

D - DEPOSIT DC - DEBIT CARD ABM - TELLER MACHINE PAP - PREAUTHORIZED PAYMENT TT - TELEPHONE TRANSFER O - OTHER

The new final balance in Hera's record book is $926.39.

Step 2: Add all deposits that have not been checked off in Hera's personal record book to the final balance shown on the bank statement.

$$\begin{aligned}\text{final balance on statement} + \text{deposits} &= \$186.39 + \$1500.00 \\ &= \$1686.39\end{aligned}$$

Step 3: Subtract all debits that have not been checked off in Hera's personal record book from the total in Step 2.

$$\begin{aligned}\$1686.39 - \text{debits} &= \$1686.39 - (\$10.00 + \$200.00 + \$550.00) \\ &= \$1686.39 - \$760.00 \\ &= \$926.39\end{aligned}$$

Step 4: Compare the total in Step 3 with the final balance in the record book.

Since both are $926.39, Hera's record book is now up to date and all entries are correct.

2. What could be the reasons for any difference between the total for the bank statement reconciliation and the final balance in the record book?

Check your answers on page 91 in the Appendix.

Turn to pages 52 and 53 in your textbook. Work through "Example 1: How much do I have in my account?"

3. Turn to pages 54 to 57 in your textbook. Do questions 1 to 7 of "Put into Practice."

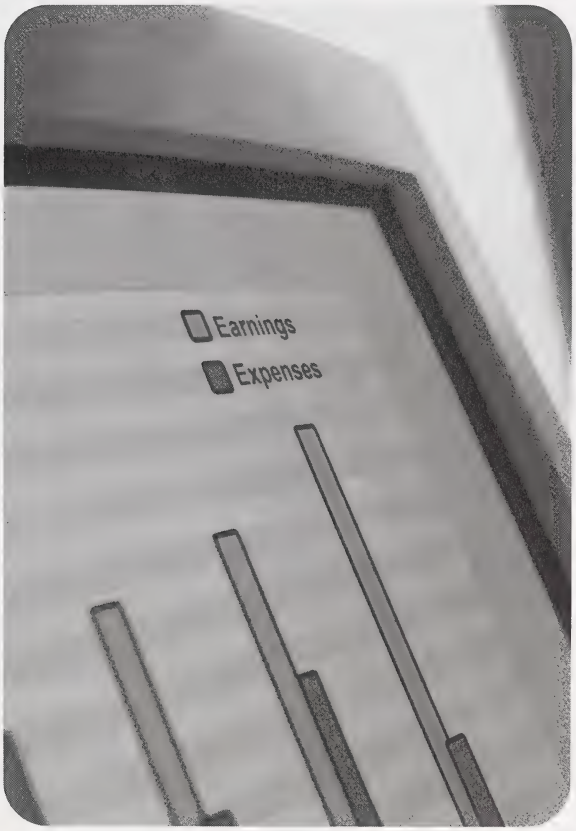
Check your answers on pages 92 to 95 in the Appendix.

In this lesson you explored writing cheques and reconciling bank statements with personal records. You are now ready to apply your skills.

the Section 2 Assignment in Assignment Booklet 1A. Answer question 4.

CONCLUSION

In this section you explored managing your finances. You investigated budgets; looked at guidelines for spending; and examined consumer issues, foreign exchange rates, and personal banking. You looked at issues associated with savings and chequing accounts, and you reconciled bank statements with account records.



Have you thought about living on your own? One of the costs of independence is having to handle money responsibly. You will quickly discover that juggling your income and expenses is a lifelong challenge. You must consider these issues when budgeting your finances and planning for your future. Be aware of your choices, and don't hesitate to seek informed advice.

SECTION 3

Interest

The Bank of Canada is Canada's central bank. It was established by an act of parliament in 1934 to help set national monetary policy in the best interests of the country. Its goals are to control inflation, stabilize exchange rates for the Canadian dollar, assist in the management of government debt, and set the bank rate. The bank rate directly affects the interest rates banks charge their customers who borrow money and the interest banks pay customers for their deposits.

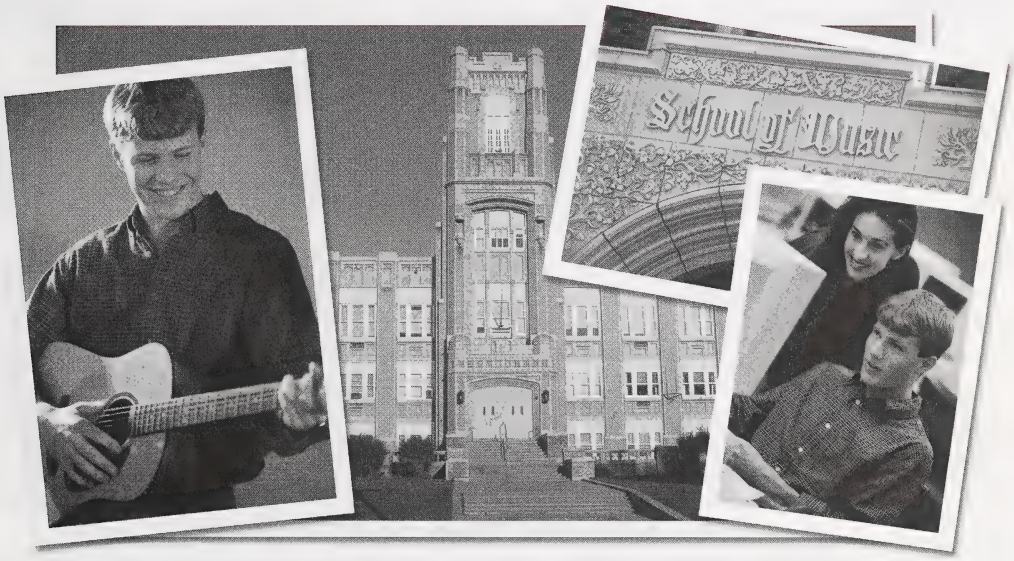
If you are borrowing money from a bank, you want to pay the lowest possible interest rate. If you have money in a savings account, you want the highest possible return on your money. However, you should be aware that there are differences in rates between individual banks and even between different customers, depending on their financial circumstances.

In this section you will investigate interest rates and explore how these rates affect simple and compound interest earned on your investments.

LESSON 1

Simple Interest

In this lesson you will explore simple interest.



Austin has been working for the past year while living at home with his parents. As a result, he has managed to save $3000.00. Because Austin plans to attend a community college in three years, he has decided to invest the money in a three-year guaranteed investment certificate (GIC).

A GIC is usually a safe way of investing your money and earning higher **interest** than you would in a regular savings account. The financial institution that issues the GIC guarantees a fixed interest rate for a specified period of time. For most GICs, you cannot cash them before the specified time period without having to pay a penalty. There are some GICs that can be cashed without penalty at any time, but the interest rate is usually lower.

The GIC that Austin purchased bears **simple interest**. Each year on the date he purchased the GIC, the interest the GIC earned will be deposited into his account.

Do you know how to calculate the total interest Austin will receive over three years?

Turn to page 58 in your textbook. Read the information about interest.

1. Turn to pages 59 and 60 in your textbook. Do questions 1 to 4 of "Investigation: How much can I earn from simple interest?"

Check your answers on pages 95 and 96 in the Appendix.

In your investigation, you examined the formula for simple interest.

$I = Prt$

I is the interest earned, P is the principal, r is the annual interest rate, and t is the time in years. (Remember to turn the % rate into a decimal number before substituting in this formula.)

The term **principal** is the sum of money on which the interest is calculated. It can be the amount of money in an account earning interest or it can be the amount of a loan.

Turn to page 61 in your textbook and work through Examples 1 and 2.

If you were using your calculator to determine interest, you could perform the calculations two different ways.

Example

Jean borrowed $500.00 for 45 days at an annual interest rate of 6%. What was the interest Jean had to pay on the loan?

Apply the simple interest formula, $I = Prt$.

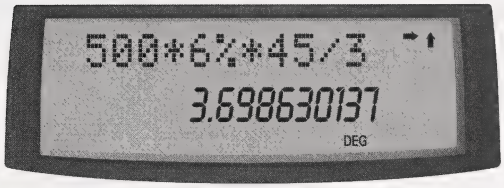
$P = 500$ $\quad r = 6\%$ or 0.06 $\quad t = \dfrac{45}{365}$ ← Express 45 days as a fraction of a year.

$I = Prt$

$= 500 \times 6\% \times (45 \div 365)$

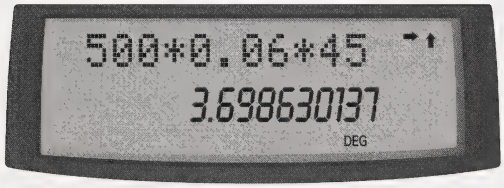
Method 1: Use the percent key.

Press these keys.



Method 2: Change 6% to 0.06.

Press these keys.



Jean's interest is $3.70.

2. Turn to pages 62 and 63 in your textbook. Do questions 1, 3, 4, and 5 of "Put into Practice."

Check your answers on pages 97 to 100 in the Appendix.

In the previous questions you calculated the interest earned on a deposit or paid on a loan. In the next set of examples you will investigate how to use the simple interest formula to find the principal, interest rate, or time.

Example

Victoria wants to buy a mountain bike in 6 months. The bank she deals with told her that if she invests her savings in a GIC, she will earn $60.00 in interest. The annual interest rate for a 6-month GIC is 5%. How much must she invest today in a GIC to earn this interest?

Apply the simple interest formula, $I = Prt$.

$I = 60$ $P = ?$ $r = 5\%$ or 0.05 $t = 6 \div 12 = 0.5$ ← Six months is half a year.

Rewrite the interest formula.

$$I = Prt$$
$$Prt = I$$
$$P \times 0.05 \times 0.5 = 60$$
$$0.025 \times P = 60$$
$$\frac{0.025 \times P}{0.025} = \frac{60}{0.025} \leftarrow \text{The opposite of multiplying is dividing.}$$
$$P = 2400$$

Victoria must invest $2400.00 today.

Example

Abraham is taking out a 3-month loan for $1000.00. The loan company told him the interest on the loan will be $50.00. What annual interest rate is the loan company charging Abraham?

Apply the simple interest formula, $I = Prt$.

$I = 50$ $P = 1000$ $r = ?$ $t = 3 \div 12 = 0.25$ ← Three months is a quarter of a year.

Rewrite the interest formula.

$$I = Prt$$
$$Prt = I$$
$$1000 \times r \times 0.25 = 50$$
$$250 \times r = 50$$
$$\frac{250 \times r}{250} = \frac{50}{250}$$
$$r = 0.20 = 20\% \quad \leftarrow \quad 0.20 = \frac{20}{100}$$

The loan company is charging Abraham an annual interest rate of 20%.

Example

Lin purchased a GIC from her bank for $1000.00. The annual interest rate on the GIC is 4%. Lin will earn $20.00 interest when the GIC matures. What is the term of the GIC?

Apply the simple interest formula, $I = Prt$.

$I = 20$ $P = 1000$ $r = 4\%$ or 0.04 $t = ?$

Rewrite the interest formula.

$$I = Prt$$
$$Prt = I$$
$$1000 \times 0.04 \times t = 20$$
$$40 \times t = 20$$
$$\frac{40 \times r}{40} = \frac{20}{40}$$
$$t = 0.5 \text{ years or 6 months}$$

The term of the GIC is 6 months.

3. Turn to page 62 in your textbook. Do question 2 of "Put into Practice."

Check your answers on pages 101 and 102 in the Appendix.

In this lesson you explored simple interest. You will use these skills in the next lesson when you explore compound interest.

Turn to the Section 3 Assignment in Assignment Booklet 1B. Answer questions 1 and 2.

LESSON 2

Compound Interest

In this lesson you will explore compound interest.

[1]

In 1993 Toby Astotin's grandmother invested $1000.00 in a compound interest Canada Savings Bond for Toby's future education. For similar investments that earn **compound interest**, each time the investment earns interest, the interest earned is added to the principal. The next time the interest is calculated, it is based on this new amount.

[1] Reproduced with the permission of the Minister of Finance and the Minister of Public Works and Government Services Canada, 2004.

Canada Savings Bonds are very similar to GICs. The government of Canada guarantees a Canada Savings Bond just like a bank guarantees a GIC. Canada Savings Bonds have two advantages over GICs:

- Canada Savings Bonds are purchased for a set term, but are cashable at any time with interest earned up to, but not including, the month in which they are cashed. GICs can be purchased for varying lengths of time, but cannot be cashed before the maturity date without penalty.

- The government of Canada guarantees a minimum interest rate on savings bonds. However, if market conditions warrant, the government may adjust the rate upward during the term of the bonds so that holders of the bonds do not cash them in before maturity.

If you have access to the Internet, you can find out more about Canada Savings Bonds at the following website:

http://www.cis-pec.gc.ca/

To find out more about compound interest, read on!

1. Turn to pages 64 to 67 in your textbook. Do questions 1 to 8 of "Investigation: How much can I earn from compound interest?"

Check your answers on pages 102 to 104 in the Appendix.

The compound interest formula you discovered when you worked through the investigation was $A = P(1+i)^n$.

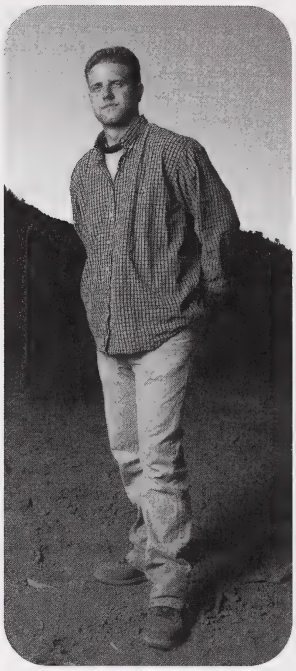
$$A = P(1+i)^n$$

A = accumulated amount (principal plus interest)
P = principal
i = interest rate per interest period
n = number of interest periods

(Remember to turn the % interest rate into a decimal number before substituting in this formula.)

You will now apply this formula when the interest is compounded **annually** (once a year).

Example

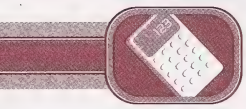


Scott is 18 years old. He deposited $10 000.00 into an account that bears interest at a rate of 9% compounded annually. How much will he have in this account after 47 years, when he is 65? How much interest will Scott earn?

Substitute the values into the compound interest formula, $A = P(1+i)^n$.

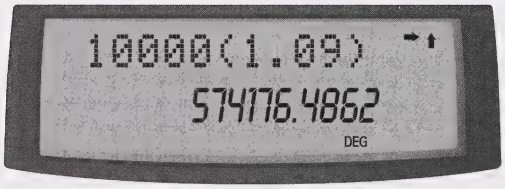
$P = 10\,000 \qquad i = 9\% = 0.09 \qquad n = 47$

$$\begin{aligned} A &= P(1+i)^n \\ &= 10\,000(1+0.09)^{47} \\ &= 10\,000(1.09)^{47} \end{aligned}$$



Use your calculator.

Press these keys.



Round your answer to the nearest cent.

$A = \$574\,176.49$

Remember, Scott deposited $10 000.00 originally. So, he earned $574 176.49 – $10 000.00 = $564 176.49 in interest.

Turn to page 68 in your textbook. Work through Example 1.

2. Turn to page 68 in your textbook. Do questions 1 and 2 of "Put into Practice."

Check your answers on pages 105 and 106 in the Appendix.

Not all interest is calculated annually. Some accounts compound interest **semi-annually** (twice a year or every six months), **quarterly** (four times a year or every three months), monthly (12 times a year), or even daily.

To see how you must adapt the compound interest formula for other interest periods, work through the next investigation.

3. Turn to pages 69 to 71 in your textbook. Do questions 1 to 5 of "Investigation: What if interest is compounded more than once a year?"

Turn to page 71 in your textbook and work through Example 1.

4. Turn to page 73 in your textbook. Do questions 1.a., 1.b., 1.c., 2.b., 2.c., 2.d., and 3 of "Put into Practice."

Check your answers on pages 106 to 109 in the Appendix.

In the previous questions you used your calculator to solve compound interest problems.

You can also use a spreadsheet to answer these questions.

Turn to page 74 in your textbook. Read the introduction to Example 2. Then work through the steps on the following pages to set up a spreadsheet template to solve this problem and related problems.

Step 1: Open a new spreadsheet.

Step 2: Enter the following headings in your spreadsheet. Format from row 9 downward in columns B, C, and D using the $ symbol.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**			
4	**Annual Interest Rate (%)**			
5	**Number of Periods Per Year**			
6	**Interest Rate Per Period (%)**			
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**

Step 3: Enter the following data and formulas in column B:

- In cell B3, enter 2500, the principal invested. Format this cell using the $ symbol.
- In cell B4, enter 8.5, the annual interest rate.
- In cell B5, enter 2. The interest is compounded semi-annually, so there are two interest periods per year.
- In cell B6, enter =B4/2. The interest is compounded semi-annually, so you divide the annual rate by 2.

Your spreadsheet should look like the one that follows.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2500.00		
4	**Annual Interest Rate (%)**	8.5		
5	**Number of Periods Per Year**	2		
6	**Interest Rate Per Period (%)**	4.25		
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**

Step 4: Enter the following data and formulas in row 9:

- In cell A9, enter 1 for the first interest period.
- In cell B9, enter =B3 to transfer the principal.
- In cell C9, enter =Round(B9*$B$6/100,2) to calculate the interest earned during this period. Remember, inserting dollar signs within the cell name keeps that particular cell address from changing when you fill down to complete the spreadsheet.
- In cell D9, enter =B9+C9 to calculate the closing balance, which is the opening balance plus interest earned.

Row 9 in your spreadsheet should look like row 9 in the spreadsheet that follows.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2500.00		
4	**Annual Interest Rate (%)**	8.5		
5	**Number of Periods Per Year**	2		
6	**Interest Rate Per Period (%)**	4.25		
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2500.00	$106.25	$2606.25
10				

Step 5: Enter the following data and formulas in row 10:

- In cell A10, enter =A9+1 to increase the period number by 1.
- In cell B10, enter =D9 to transfer the closing balance from the previous line. The closing balance from the first period becomes the opening balance for the second period.
- In cell C10, enter =Round(B10*$B$6/100,2) to calculate the interest earned during the second period.
- In cell D10, enter =B10+C10 to calculate the closing balance.

Row 10 in your spreadsheet should look like row 10 in the spreadsheet that follows.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2500.00		
4	**Annual Interest Rate (%)**	8.5		
5	**Number of Periods Per Year**	2		
6	**Interest Rate Per Period (%)**	4.25		
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2500.00	$106.25	$2606.25
10	2	$2606.25	$110.77	$2717.02
11				

Step 6: Complete the spreadsheet. Because the investment is for 5 years, there are 10 interest periods. Therefore, highlight cells A10 to D18; then, from the Edit menu, select Fill and Down.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2500.00		
4	**Annual Interest Rate (%)**	8.5		
5	**Number of Periods Per Year**	2		
6	**Interest Rate Per Period (%)**	4.25		
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2500.00	$106.25	$2606.25
10	2	$2606.25	$110.77	$2717.02
11	3	$2717.02	$115.47	$2832.49
12	4	$2832.49	$120.38	$2952.87
13	5	$2952.87	$125.50	$3078.37
14	6	$3078.37	$130.83	$3209.20
15	7	$3209.20	$136.39	$3345.59
16	8	$3345.59	$142.19	$3487.78
17	9	$3487.78	$148.23	$3636.01
18	10	$3636.01	$154.53	$3790.54
19				

Step 7: Save the spreadsheet as a template.

After 5 years, Sabrina received $3790.54.

The total interest earned is $3790.54 – $2500.00 = $1290.54.

After 7 interest periods, or 3.5 years, her investment is worth $3345.59. After 5 interest periods, or 2.5 years, Sabrina will have at least $3000.00 for her car down payment.

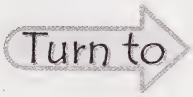
The spreadsheet template Mod_1_5.xls in the Spreadsheets folder on the multimedia CD can be used to find compound interest amounts. You only need to set values in cells B3, B4, B5, and B7 to see the results. This spreadsheet includes a macro that fills in the appropriate number of rows.

5. Modify your compound interest spreadsheet to determine the final amount if $3000.00 is deposited in an account for 5 years at 8%/a compounded quarterly.

6. Turn to page 78 in your textbook. Do questions 4, 5, and 6 of "Put into Practice."

Check your answers on pages 110 to 116 in the Appendix.

In this lesson you explored compound interest. You applied the compound interest formula using your calculator, and you used a compound interest spreadsheet.



the Section 3 Assignment in Assignment Booklet 1B. Answer questions 3 and 4.

CONCLUSION

In this section you explored simple interest and compound interest. In your exploration you used your calculator and a compound interest spreadsheet template. You discovered that simple interest grows more slowly than compound interest. To take full advantage of the power of compound interest, your investments must be long-term.

Did you know that Long Island, part of New York City, was purchased in 1664 from the Native American people living there for 6 pounds 10 shillings, or about $15.10 in Canadian dollars? If this amount were invested at an annual interest rate of 10%, the total in 2014 at simple interest would be $543.60. However, if the $15.10 were left to compound, in 2014 it would be worth about $4 638 918 608 000 000.00, or just under $4639 trillion!

MODULE SUMMARY

In this module you explored issues surrounding independent living. In Section 1 you focused on alternatives for investing your income. You investigated simple and compound interest, and you discovered that the power of compound interest depends on the length of time money is invested. You used spreadsheet software to assist you in your analysis.

In Section 2 you examined different ways of earning an income, how to calculate take-home pay from gross income by estimating basic deductions, and how to use tax forms.

In Section 3 you analyzed budgets, consumer spending and unit costs, foreign exchange rates, and banking. You reconciled bank statements with personal records, and you reviewed the elements of writing cheques.

Managing your money involves a careful balance between income and expenses. When you succeed at this task, you feel the pride of accomplishment and the satisfaction of being able to reward yourself for your efforts. What do you plan to do with the money you save? How will you decide what you can afford to do today and what you must save for tomorrow?

Turn to Assignment Booklet 1B and complete the Final Module Assignment.

REVIEW

This Review will help you apply what you learned in Module 1 and prepare for the Final Test. Read the skills checklist for this module. Use this list to guide your study and to help you decide how much of the Review you should complete.

Skills Checklist

Interest

- ❑ Solve investment and credit problems involving simple and compound interest.
- ❑ Plot and describe data of exponential form, such as how money grows under compound interest.
- ❑ Solve problems involving combinations of tables by using spreadsheet templates.
- ❑ Modify a spreadsheet template to allow users to input their own variables.

Earnings and Deductions

- ❑ Solve consumer problems such as the following:
  - wages earned in various situations
  - personal income tax calculations

Budgets

- ❑ Solve budget problems using graphs and tables to communicate solutions.
- ❑ Solve consumer problems such as the following:
  - exchange rates
  - unit prices
- ❑ Reconcile financial statements such as the following:
  - chequebooks and electronic bank transactions with bank statements
  - credit card statements with payment receipts

Review Questions

1. Turn to pages 80 and 81 in your textbook. Do questions 1 to 6 of "Review of Unit One." Use the CPP and EI maximum values from pages 18 and 19 in your textbook if required.

2. Turn to pages 81 to 85 in your textbook. Do questions 7 to 13 of "Review of Unit One."

3. Turn to page 87 in your textbook. Do questions 15 and 16 of "Review of Unit One."

Check your answers on pages 116 to 123 in the Appendix.

MATHEMATICS 24

Appendix

GLOSSARY
ANSWER KEY
IMAGE CREDITS
LEARNING AIDS

Glossary

annually: once a year (every 12 months)

annual expenses: expenses that arise once a year

basic deductions: income tax, Canada Pension Plan contributions, and Employment Insurance premiums

budget: a plan to reconcile income and expenses

commission: payment based on a percentage of sales

compound interest: interest calculated on the original principal and the previous interest earned

credit: a deposit into a personal banking account

debit: a withdrawal from a personal banking account

graduated commission: commission that is based on increasing percentages for higher sales

gratuity: money offered by customers for good service

gross pay (income): total money earned before deductions

interest: money beyond the principal paid on a deposit or for a loan

monthly fixed expenses: budget amounts that vary little from month to month

monthly variable expenses: budget amounts that change from month to month

net pay (income): income after deductions

overtime pay: wages at a higher than normal rate for working beyond a specified number of hours

piecework: payment based on the number of items produced

principal: the original amount of a deposit or loan

quarterly: four times a year (every three months)

salary: a fixed rate of pay for a specified length of time (usually a month)

semi-annually: twice a year (every six months)

simple interest: interest based on the original principal

tip: gratuity

unit costs: costs of single items or of a specified amount

wage: an hourly or daily rate of pay

Answer Key

Section 1: Earnings and Deductions

Lesson 1: Earning an Income

1. Textbook, pages 8 and 9, "Investigation: Earning Money"

Option A

$$\text{regular pay} = 40\text{ h} \times \$6.50/\text{h} = \$260.00$$

$$\text{overtime pay} = 5\text{ h} \times \$6.50/\text{h} \times 1.5 = \$48.75$$

$$\text{total weekly earnings} = \$260.00 + \$48.75 = \$308.75$$

Option B

$$\text{regular pay} = 40\text{ h} \times \$5.90/\text{h} = \$236.00$$

$$\text{tips} = 90\% \text{ of } \$180.00 = 0.90 \times \$180.00 = \$162.00$$

$$\text{total gross pay} = \$236.00 + \$162.00 = \$398.00$$

Option C

$$\text{regular pay} = 40\text{ h} \times \$13.00/\text{h} = \$520.00$$

$$\text{piecework} = 22 \times \$6.50 = \$143.00$$

$$\text{total gross pay} = \$520.00 + \$143.00 = \$663.00$$

Option D

$$\text{commission on } \$2500.00 = 0.03 \times \$2500.00 = \$75.00$$

$$\text{commission on net } \$3267.00 - \$2500.00 = 0.05 \times \$767.00 = \$38.35$$

$$\text{total gross pay} = \$236.00 + \$75.00 + \$38.35 = \$349.35$$

She should choose Option C if she wants to maximize her earnings.

2. Textbook, pages 13 to 15, "Put into Practice," question 1 and questions 3 to 8

1. a. If Laura accepts the first offer, she would earn 160 h $\times$ \$9.50/h = \$1520.00 per month.

The second offer depends on her monthly sales. Her income could be as low as \$600.00 if she did not have any sales that month. However, if her sales were high, her income could be much higher than the \$1520.00 from the first offer.

b. Offer 1: monthly income = \$1520.00

$$\begin{aligned}\text{Offer 2: monthly income} &= \$600.00 + 4\% \text{ of } \$25\,000.00 \\ &= \$600.00 + (0.04 \times \$25\,000.00) \\ &= \$1600.00\end{aligned}$$

Offer 2 would be better if Laura had sales of \$25 000 per month.

c. The two offers would be the same if Laura's sales earned \$1520.00 – \$600.00 = \$920.00 commission.

$$\begin{aligned}\text{sales} \times 0.04 &= \$920.00 \\ \text{sales} &= \$920.00 \div 0.04 \\ &= \$23\,000.00\end{aligned}$$

Laura should accept the second offer if she expects her sales to be over \$23 000.00 per month.

3. $\text{regular pay} = 32 \text{ h} \times \$7.50/\text{h} = \$240.00$

$\text{overtime pay} = 5 \text{ h} \times \$7.50/\text{h} \times 2 = \$75.00$

$$\begin{aligned}\text{gross pay} &= \$240.00 + \$75.00 \\ &= \$315.00\end{aligned}$$

Katherine's gross pay was \$315.00.

4. a. wages

$$\begin{aligned}\text{gross pay} &= 35 \text{ h} \times \$7.00/\text{h} \\ &= \$245.00\end{aligned}$$

b. commission and salary

monthly salary = \$1050.00

commission on sales over \$3000.00 = 6% of (\$5400.00 − \$3000.00)
= 0.06 × \$2400.00
= \$144.00

gross pay = \$1050.00 + \$144.00
= \$1194.00

c. wages

regular wages = 40 h × \$12.50/h
= \$500.00

overtime = 8 h × \$12.50/h × 1.5
= \$150.00

gross pay = \$500.00 + \$150.00
= \$650.00

d. piecework

gross income = 45 vests × \$5.50/vest
= \$247.50

e. commission

gross income = 9% of \$16 200.00
= 0.09 × \$16 200.00
= \$1458.00

f. salary and graduated commission

commission on first \$2000.00 = 3.5% of \$2000.00
= 0.035 × \$2000.00
= \$70.00

commission on sales over \$2000.00 = 5.5% of (\$2645.00 − \$2000.00)
= 0.055 × \$645.00
≐ \$35.48

gross income = \$700.00 + \$70.00 + \$35.48
= \$805.48

5. a. Brooke's share = 80% of $331.00
$= 0.80 \times \$331.00$
$= \$264.80$

b. Brooke's wages = 40 h × $6.00/h
$= \$240.00$

Brooke's gross pay = $264.80 + $240.00
$= \$504.80$

6. Jerry's net sales were $4500.00 – $800.00 = $3700.00.

Jerry's commission = 3.5% of $3700.00
$= 0.035 \times \$3700.00$
$= \$129.50$

Jerry's gross income = $236.00 + $129.50
$= \$365.50$

7. Wendy's commission = 23% of $139.98
$= 0.23 \times \$139.98$
$\doteq \$32.20$

8. Scott's regular wages = 40 h × $8.25/h
$= \$330.00$

overtime pay = 2 h × $8.25/h × 1.5
$= \$24.75$

tips = $150.00

Scott's gross pay = $330.00 + $24.75 + $150.00
$= \$504.75$

3. Following are the formulas for cells D3 through D9:

- In cell D3, enter =B3*C3.
- In cell D4, enter =B4*C4.
- In cell D5, enter =B5*C5.
- In cell D6, enter =B6*C6.
- In cell D7, enter =B7*C7.
- In cell D8, enter =B8*C8.
- In cell D9, enter =B9*C9.

4. Textbook, page 14, "Put into Practice," question 2

2. Following are the instructions for completing the spreadsheet. (If you used the templated spreadsheet from the multimedia CD, you would only need to carry out the highlighting and Fill-Down steps.)

- Open a new spreadsheet.
- Enter the headings in row 1 and column A.
- In cells B1 through B6, enter the hourly rates.

- In cell C2, enter 40 in each cell.
- In cell D2, enter =B2*40.
- In cell E2, enter =Round(B2*1.5,2).
- Highlight cells C2 through E6. Select Fill and Down from the Edit menu.
- In cells F2 through F6, enter the overtime hours.
- In cell G2, enter =Round(E2*F2,2).
- In cell H2, enter =D2+G2.
- Highlight cells G2 through H6. Select Fill and Down from the Edit menu.

You should see the following table.

	A	B	C	D	E	F	G	H
1	Employee	Hourly Rate ($)	Regular Hours (hr)	Regular Pay ($)	Overtime Rate ($)	Overtime Hours (hr)	Overtime Pay ($)	Gross Pay ($)
2	Courtney	7.00	40.00	280.00	10.50	4.00	42.00	322.00
3	Sayed	10.50	40.00	420.00	15.75	0.00	0.00	420.00
4	Nigel	17.25	40.00	690.00	25.88	3.50	90.58	780.58
5	Amber	8.50	40.00	340.00	12.75	2.00	25.50	365.50
6	Jeff	14.00	40.00	560.00	21.00	7.00	147.00	707.00

Lesson 2: Payroll Deductions

1. a. The basic deductions from Katherine's earnings are CPP, EI, and income tax. These basic deductions total $170.89.

b. Katherine's basic deductions are $170.89 out of a gross monthly income of $887.25.

$$\frac{\$170.89}{\$887.25} = 0.192\,606\,368\ldots$$

$$\doteq 19.3\%$$

This represents about 19.3% of her gross income.

2. Personal deductions may vary from employee to employee. This is one reason why an employer may want to list personal deductions separately from the basic deductions that all employees pay and that are calculated using the same formulas.

3. Other personal deductions that might appear on a pay statement include group insurance, charitable donations, professional and union dues, RRSP and other pension plan premiums, and payroll savings.

4. Net pay is the difference between gross income and the total of all deductions.

5. Textbook, page 20, "Investigation: Pay Deductions," questions 1 and 2

1. net pay = total earnings – total deductions
= $321.55 – $70.18
= $251.37

net pay YTD = $696.20 – $153.03
= $543.17

2. net pay = $359.90 – $78.84
= $281.06

net pay YTD = $1056.10 – $231.87
= $824.23

6. CPP

Dempsey's annual income is 12 × $2350.00 = $28 200.00.

His total annual contribution is based on $28 200.00 – $3500.00 = $24 700.00.

4.95% of $24 700.00 = 0.0495 × $24 700.00
= $1222.65

$1222.65 is less than the maximum CPP contribution of $1801.80. Therefore, Dempsey's monthly CPP contribution is $1222.65 ÷ 12 = $101.89.

EI

Dempsey's annual income is $28 200.00. His total annual premium is 2.10%.

2.10% of $28 200.00 = 0.0210 × $28 200.00
= $592.20

This is less than the annual maximum of $819.00. Therefore, Dempsey's monthly EI premium is $592.20 ÷ 12 = $49.35.

7. Textbook, page 25, "Put into Practice," questions 2, 3.a., and 5

2. Gross income is the total of your earnings before deductions. Taxable income is generally less than your gross income. Allowable deductions are subtracted from your gross income. This reduced amount is used to calculate your federal and provincial income taxes.

3. a. Matt's annual income is 26 × 80 × $8.75 = $18 200.00, which is in the first category.

federal tax: 0.16 × 80 × $8.75 = $112.00
provincial tax: 0.1 × 80 × $8.75 = $70.00

5. a. Todd's rate of contribution for CPP is 4.95% of the difference between his annual income and $3500.00. His maximum annual contribution is $1801.80.

Todd's rate of contribution for EI is 2.10% of his annual income. The maximum possible annual premium is $819.00.

b. CPP

Todd's annual income is $26 \times \$1152.00 = \$29\ 952.00$.

$$4.95\% \text{ of } (\$29\ 952.00 - \$3500.00) = 0.0495 \times \$26\ 452.00$$
$$\doteq \$1309.37$$

His biweekly contribution is $\$1309.37 \div 26 \doteq \$50.36$.

EI

$$2.10\% \text{ of } \$29\ 952.00 = 0.0210 \times \$29\ 952.00$$
$$\doteq \$628.99$$

His biweekly contribution is $\$628.99 \div 26 \doteq \$24.19$.

c. Todd's taxable income is $29 302.00.

$$\$29\ 952.00 - \text{union dues} = \$29\ 952.00 - (26 \times \$25.00)$$
$$= \$29\ 302.00$$

d. Todd's federal tax rate is 16%.

e. $$16\% \text{ of } \$29\ 302.00 = 0.16 \times \$29\ 302.00$$
$$= \$4688.32$$

His biweekly federal tax is $\$4688.32 \div 26 = \$180.32$.

Todd's provincial tax is 10%.

$$10\% \text{ of } \$29\ 302.00 = \$2930.20$$

His biweekly provincial tax is $\$2930.20 \div 26 = \$112.70$.

f. Todd's total biweekly deductions are $392.57.

Union Dues	$25.00
CPP	$50.36
EI	$24.19
Federal Tax	$180.32
Provincial Tax	$112.70
Total	$392.57

g. Todd's biweekly income is $1152.00 – $392.57 = $759.43.

8. The completed forms for Daniel's return are shown on the following pages.

Daniel should receive a $1240.06 refund.

Completed Tax Forms for Daniel

Please answer the following question

Did you own or hold foreign property at any time in 2003 with a total cost of more than CAN$100,000? (read the "Foreign income" section in the guide for details) ..... 266 Yes ☐ 1 No ☐ 2

If *yes*, attach a completed Form T1135.

If you had dealings with a non-resident trust or corporation in 2003, see the "Foreign income" section in the guide.

As a Canadian resident, you have to report your income from all sources both inside and outside Canada.

Total income

Employment income (box 14 on all T4 slips)		101	14 995 82
Commissions included on line 101 (box 42 on all T4 slips)	102		
Other employment income		104 +	
Old Age Security pension (box 18 on the T4A(OAS) slip)		113 +	
CPP or QPP benefits (box 20 on the T4A(P) slip)		114 +	
Disability benefits included on line 114 box 16 on the T4A(P) slip	152		
Other pensions or superannuation		115 +	
Employment Insurance and other benefits (box 14 on the T4E slip)		119 +	
Taxable amount of dividends from taxable Canadian corporations (see the guide)		120 +	
Interest and other investment income (attach Schedule 4)		121 +	
Net partnership income: limited or non-active partners only (attach Schedule 4)		122 +	
Rental income — Gross 160 — Net		126 +	
Taxable capital gains (attach Schedule 3)		127 +	
Support payments received — Total 156 — Taxable amount		128 +	
RRSP income (from all T4RSP slips)		129 +	
Other income — Specify:		130 +	
Self-employment income (see lines 135 to 143 in the guide)			
Business income — Gross 162 — Net		135 +	
Professional income — Gross 164 — Net		137 +	
Commission income — Gross 166 — Net		139 +	
Farming income — Gross 168 — Net		141 +	
Fishing income — Gross 170 — Net		143 +	
Workers' compensation benefits (box 10 on the T5007 slip)	144		
Social assistance payments	145 +		
Net federal supplements (box 21 on the T4A(OAS) slip)	146 +		
Add lines 144, 145, and 146 (see line 250 in the guide)	=	▶ 147 +	
Add lines 101, 104 to 143, and 147			
This is your **total income**.		150 =	14 995 82

Attach your Schedule 1 (federal tax), and Form 428 (provincial or territorial tax) here. Also attach here any other schedules, information slips, forms, receipts, and documents that you need to include with your return.

Net income

Enter your **total income** from line 150	150		14 995 82
Pension adjustment (box 52 on all T4 slips and box 34 on all T4A slips)	206		
Registered pension plan deduction (box 20 on all T4 slips and box 32 on all T4A slips)	207		
RRSP deduction (see Schedule 7; attach receipts)	208 +		
Saskatchewan Pension Plan deduction (maximum $600)	209 +		
Annual union, professional, or like dues (box 44 on all T4 slips and receipts)	212 +	360 00	
Child care expenses (attach Form T778)	214 +		
Attendant care expenses	215 +		
Business investment loss Gross 228	Allowable deduction 217 +		
Moving expenses	219 +		
Support payments made Total 230	Allowable deduction 220 +		
Carrying charges and interest expenses (attach Schedule 4)	221 +		
Deduction for CPP or QPP contributions on self-employment and other earnings (attach Schedule 8)	222 +		
Exploration and development expenses (attach Form T1229)	224 +		
Other employment expenses	229 +		
Clergy residence deduction	231 +		
Other deductions Specify:	232 +		
Add lines 207 to 224, 229, 231, and 232.	233 =	360 00	▶ – 360 00
Line 150 minus line 233 (if negative, enter "0"). This is your **net income before adjustments**.	234 =		14 635 82
Social benefits repayment (if you reported income on line 113, 119, or 146, see line 235 in the guide)	235 –		
Line 234 minus line 235 (if negative, enter "0"). If you have a spouse or common-law partner, see line 236 in the guide. This is your **net income**.	236 =		14 635 82

Taxable income

Employee home relocation loan deduction (box 37 on all T4 slips)	248		
Security options deductions (stock option and shares)	249 +		
Other payments deduction (if you reported income on line 147, see line 250 in the guide)	250 +		
Limited partnership losses of other years	251 +		
Non-capital losses of other years	252 +		
Net capital losses of other years	253 +		
Capital gains deduction	254 +		
Northern residents deductions (attach Form T2222)	255 +		
Additional deductions Specify:	256 +		
Add lines 248 to 256.	257 =		▶ –
Line 236 minus line 257 (if negative, enter "0") This is your **taxable income**.	260 =		14 635 82

Use your taxable income to calculate your federal tax on Schedule 1 and your provincial or territorial tax on Form 428.

T1-2003 **Federal Tax** **Schedule 1**

Complete this schedule to claim your federal non-refundable tax credits and to calculate your net federal tax.

You must attach a copy of this schedule to your return.

Enter your **taxable income** from line 260 of your return — 14 635 | 82 — 1

Use the amount on line 1 to determine which **ONE** of the following columns you have to complete.

If the amount on line 1 is:	$32,183 or less	more than $32,183 but not more than $64,368	more than $64,368 but not more than $104,648	more than $104,648
Enter the amount from line 1 above	14 635 | 82 — 2	— 2	— 2	— 2
Base amount	− 0 | 00 — 3	− 32 183 | 00 — 3	− 64 368 | 00 — 3	− 104 648 | 00 — 3
Line 2 minus line 3 (this amount cannot be negative)	= 14 635 | 82 — 4	= — 4	= — 4	= — 4
Rate	× 16% — 5	× 22% — 5	× 26% — 5	× 29% — 5
Multiply the amount on line 4 by the rate on line 5	= 2341 | 73 — 6	= — 6	= — 6	= — 6
Tax on base amount	+ 0 | 00 — 7	+ 5 149 | 00 — 7	+ 12 230 | 00 — 7	+ 22 703 | 00 — 7
Add lines 6 and 7	= 2341 | 73 — 8	= — 8	= — 8	= — 8

Federal non-refundable tax credits (Read the guide for details about these credits.)

Basic personal amount	**claim $7,756**	300	7756 | 00
Age amount (if you were born in 1938 or earlier)	(maximum $3,787)	301 +	
Spouse or common-law partner amount:			
Base amount 7 245 | 00			
Minus: his or her net income (from page 1 of your return) −			
Result: (if negative, enter "0") =	(maximum $6,586) ▶	303 +	
Amount for an eligible dependant (attach Schedule 5)	(maximum $6,586)	305 +	
Amount for infirm dependants age 18 or older (attach Schedule 5)		306 +	
CPP or QPP contributions:			
through employment from box 16 and box 17 on all T4 slips	(maximum $1,801.80)	308 +	463 | 97 •
on self-employment and other earnings (from Schedule 8)		310 +	•
Employment Insurance premiums from box 18 on all T4 slips	(maximum $819.00)	312 +	314 | 91 •
Pension income amount	(maximum $1,000)	314 +	
Caregiver amount (attach Schedule 5)		315 +	
Disability amount		316 +	
Disability amount transferred from a dependant		318 +	
Interest paid on your student loans		319 +	
Tuition and education amounts (attach Schedule 11)		323 +	
Tuition and education amounts transferred from a child		324 +	
Amounts transferred from your spouse or common-law partner (attach Schedule 2)		326 +	
Medical expenses (attach receipts) 330			
Minus: $1,755 or 3% of line 236, whichever is **less**	−		
Subtotal	=		
Minus: Medical expenses adjustment 331	−		
Allowable portion of medical expenses (if negative, enter "0")	= ▶	332 +	
Add lines 300 to 326, and 332.		335 =	8534 | 88
Multiply the amount on line 335 by 16% =		338	1365 | 58
Donations and gifts	(attach Schedule 9)	349 +	
Total federal non-refundable tax credits: Add lines 338 and 349.		350 =	1365 | 58

continue on the back ⇨

Net federal tax

Enter the amount from line 8 on the other side			2341 73	9
Federal tax on split income (from line 4 of Form T1206)	424	+		10
Add lines 9 and 10		=	2341 73	11
Enter the amount from line 350 on the other side	350		1365 58	
Federal dividend tax credit (13.3333% of the amount on line 120 of your return)	425	+		
Overseas employment tax credit (attach Form T626)	426	+		
Minimum tax carry-over	427	+		
Add lines 350, 425, 426, and 427		=	1365 58	12
Basic federal tax: Line 11 minus line 12 (if negative, enter "0")	429	=	976 15	13
Federal foreign tax credit: Complete the federal foreign tax credit calculation below and enter the amount from line (i) or line (ii), whichever is **less**				14
Federal tax: Line 13 minus line 14 (if negative, enter "0")	406	=	976 15	15
Total federal political contributions (attach receipts)	409			
Federal political contribution tax credit (see the guide)	410			
Investment tax credit (attach Form T2038(IND))	412	+		
Labour-sponsored funds tax credit — Net cost 413 / Allowable credit 414		+		
Add lines 410, 412, and 414.	416	=		16
Line 15 minus line 16 (if negative, enter "0") (if you have an amount on line 424 above, see Form T1206)	417	=		17
Additional tax on RESP accumulated income payments (attach Form T1172)	418	+		18
Net federal tax: Add lines 17 and 18. Enter this amount on line 420 of your return.	420	=	976 15	19

Federal foreign tax credit: (see lines 431 and 433 in the guide)

Make a separate calculation for each foreign country. Enter the result on line 14 above.

Non-business-income tax paid to a foreign country 431 (i)

Net foreign non-business income * 433 / Net income ** X Basic federal tax *** = (ii)

* Reduce this amount by any income from that foreign country for which you claimed a capital gains deduction, and by any income from that country that was, under a tax treaty, either exempt from tax in that country or deductible as exempt income in Canada (included on line 256). Also reduce this amount by the lesser of lines E and F on Form T626.

** Line 236 plus the amount on line 3 of Form T1206, minus the total of the amounts on lines 248, 249, 250, 253, 254, and minus any amount included on line 256 for foreign income deductible as exempt income under a tax treaty, income deductible as net employment income from a prescribed international organization, or non-taxable tuition assistance from box 21 of the T4E slip. If the result is less than the amount on line 433, enter your **Basic federal tax*** ** on line (ii).

*** Line 429 plus the amount on lines 425 and 426, and minus any refundable Quebec abatement (line 440) and any federal refundable First Nations abatement (line 441 on the return for residents of Yukon).

Alberta

Alberta Tax and Credits

AB428
T1 General – 2003

Complete this form and **attach a copy** of it to your return. For details, see pages 1 to 4 in the forms book.

Alberta tax

Enter your **taxable income** from line 260 of your return			14 635 82	1
Alberta income tax rate			× 10%	2
Multiply line 1 by line 2	**Tax on taxable income**		= 1463 58	3
Alberta tax on split income from Form T1206		6151 +		• 4
Add lines 3 and 4			= 1463 58	5

Alberta non-refundable tax credits

Important: Provincial non-refundable tax credits may be **different** from the federal amounts claimed on Schedule 1. For details, see the *Provincial Worksheet* and pages 1 to 3 in the forms book.

	For internal use only	5608			
Basic personal amount	**claim $13,525**	5804	13 525 00		6
Age amount (if born in 1938 or earlier)	(use provincial worksheet)	5808	+		7
Spouse or common-law partner amount					
Base amount	13,525 00				
Minus: his or her net income from page 1 of your return	–				
Result: (if negative, enter "0")	=	▶ 5812	+		8
Amount for an eligible dependant:					
Base amount	13,525 00				
Minus: his or her net income from line 236 of the return	–				
Result: (if negative, enter "0")	=	▶ 5816	+		9
Amount for infirm dependants age 18 or older	(use provincial worksheet)	5820	+		10
Canada Pension Plan or Quebec Pension Plan contributions					
	(amount from line 308 of your federal Schedule 1)	5824	+	463 97	• 11
	(amount from line 310 of your federal Schedule 1)	5828	+		• 12
Employment Insurance premiums	(amount from line 312 of your federal Schedule 1)	5832	+	314 91	• 13
Pension income amount	(use provincial worksheet)	5836	+		14
Caregiver amount	(use provincial worksheet)	5840	+		15
Disability amount	(see line 5844 on page 2 in your forms book)	5844	+		16
Disability amount transferred from a dependant					
	(use provincial worksheet)	5848	+		17
Interest paid on your student loan	(amount from line 319 of your federal Schedule 1)	5852	+		18
Your tuition and education amounts	[attach Schedule AB(S11)]	5856	+		19
Tuition and education amounts transferred from a child		5860	+		20
Amounts transferred from your spouse or common-law partner	[attach Schedule AB(S2)]	5864	+		21

Medical expenses	5868				22
Enter $1,759 or 3% of line 236, whichever is **less**		–			23
Line 22 minus line 23 (if negative, enter "0")		=			24
Medical expenses adjustment	(use provincial worksheet)	5872	–		25
Line 24 minus line 25 (if negative, enter "0")		5876 =	▶	+	26
Add lines 6 through 21, and line 26			5880 =	14 303 88	27
Non-refundable tax credit rate			×	10%	28
Multiply line 27 by line 28			5884 =	1430 39	29

Donations and gifts:

Amount from line 345 of your federal Schedule 9	× 10% =			30
Amount from line 347 of your federal Schedule 9	× 12.75% =	+		31
Add lines 30 and 31	5896 =	▶	+	32
Add lines 29 and 32	**Alberta non-refundable tax credits** 6150 =	1430 39	▶ –	1430 39 33
Line 5 minus line 33 (if negative, enter "0")			=	33 19 34

Continue on the back ⇨

Alberta tax *(continued)*

Enter the amount from line 34 on the front of this form					33 19	34
Alberta dividend tax credit: Amount from line 120 of your return	× 6.4% =	6152	+	• 35		
Alberta overseas employment tax credit: Amount from line 426 of federal Schedule 1	× 35% =	6153	+	• 36		
Alberta minimum tax carry-over: Amount from line 427 of federal Schedule 1	× 35% =	6154	+	• 37		
Add lines 35, 36, and 37			=	▶	–	38
Line 34 minus line 38 (if negative, enter "0")					= 33 19	39
Alberta additional tax for minimum tax purposes Form T691: Line 108 minus line 111	× 35% =				+	40
Add lines 39 and 40					= 33 19	41
Enter the provincial foreign tax credit from Form T2036					–	42
Line 41 minus line 42					= 33 19	43

Alberta political contribution tax credit

Enter the Alberta political contributions made in 2003	6003		44	
Credit calculated for line 45 on the *Provincial Worksheet*		(maximum $750)		– 45
Line 43 minus line 45 (if negative, enter "0")				= 46
Enter your royalty tax rebate from Form T79				– 47
Line 46 minus line 47 (if negative, enter "0") Enter the result on line 428 of your return		**Alberta tax**		= 33 19 48

Refund or Balance owing

Net federal tax: Enter the amount from line 19 of Schedule 1 (attach Schedule 1, even if the result is "0")	420		976 15
CPP contributions payable on self-employment and other earnings (from Schedule 8)	421 +		
Social benefits repayment (enter the amount from line 235)	422 +		
Provincial or territorial tax (attach Form 428, even if the result is "0")	428 +		33 19
Add lines 420 to 428			
This is your **total payable**.	435 =		1009 34 •

Total income tax deducted (from all information slips)	437	2249 40 •	
Refundable Quebec abatement	440 +	•	
CPP overpayment (enter your excess contributions)	448 +	•	
Employment Insurance overpayment (enter your excess contributions)	450 +	•	
Refundable medical expense supplement	452 +	•	
Refund of investment tax credit (attach Form T2038(IND))	454 +	•	
Part XII.2 trust tax credit (box 38 on all T3 slips)	456 +	•	
Employee and partner GST/HST rebate (attach Form GST370)	457 +	•	
Tax paid by instalments	476 +	•	
Provincial or territorial credits (attach Form 479 if it applies)	479 +	•	
Add lines 437 to 479			
These are your **total credits**.	482 =	2249 40 ▶	– 2249 40
Line 435 minus line 482			= –1240 06

If the result is negative, you have a **refund**.
If the result is positive, you have a **balance owing**.
Enter the amount below on whichever line applies.

Generally, we do not charge or refund a difference of $2 or less.

Refund 484 1240 06 •

Balance owing 485 •

Amount enclosed 486 •

Attach to page 1 a **cheque** or **money order** payable to the Receiver General. Your payment is due no later than April 30, 2004.

Direct deposit – Start or change **(see line 484 in the guide)**

You do not have to complete this area every year. Do not complete it this year if your direct deposit information for your refund has not changed.

Refund and GST/HST credit – To start direct deposit or to change account information only, attach a "void" cheque or complete lines 460, 461, and 462.

Note: To deposit your **CCTB** payments (including certain related provincial or territorial payments) into the **same** account, also check box 463.

Branch number	Institution number	Account number	CCTB
460 _____ (5 digits)	461 _____ (3 digits)	462 _____ (maximum 12 digits)	463 ☐

I certify that the information given on this return and in any documents attached is correct, complete, and fully discloses all my income.

Sign here _____

It is a serious offence to make a false return.

Telephone ( ) Date

490 **For professional tax preparers only**

Name:
Address:

Telephone: ( )

Do not use this area 487 ☐ 488 ☐ •

Privacy Act Personal Information Bank number CCRA/P-PU-005

Section 2: Budgets

Lesson 1: Budgeting for Expenses

1. Textbook, pages 35 to 38, "Put into Practice," questions 1, 2, 4, and 7

1. a. Carmen's net monthly income is $28 500.00 ÷ 12 = $2375.00.

b. i. Carmen should budget 30% of his income on housing.

$$\begin{aligned} 30\% \text{ of } \$2375.00 &= 0.30 \times \$2375.00 \\ &= \$712.50 \end{aligned}$$

ii. Carmen should budget 16% of his income on transportation.

$$\begin{aligned} 16\% \text{ of } \$2375.00 &= 0.16 \times \$2375.00 \\ &= \$380.00 \end{aligned}$$

iii. Carmen should budget 18% of his income on food.

$$\begin{aligned} 18\% \text{ of } \$2375.00 &= 0.18 \times \$2375.00 \\ &= \$427.50 \end{aligned}$$

iv. Carmen should budget 5% of his income on entertainment.

$$\begin{aligned} 5\% \text{ of } \$2375.00 &= 0.05 \times \$2375.00 \\ &= \$118.75 \end{aligned}$$

2. The total of the Huangs' annual car expenses is $1700.00 + $139.00 + $110.98 = $1949.98. They should set aside $1949.98 ÷ 12 ≐ $162.50 per month for these expenses.

4. In the first three months of the year, Aaron spent $135.00 + $209.75 + $186.00 = $530.75 on groceries.

Based on those first three months, he should budget $530.75 ÷ 3 ≐ $176.92, or about $180.00, per month for food.

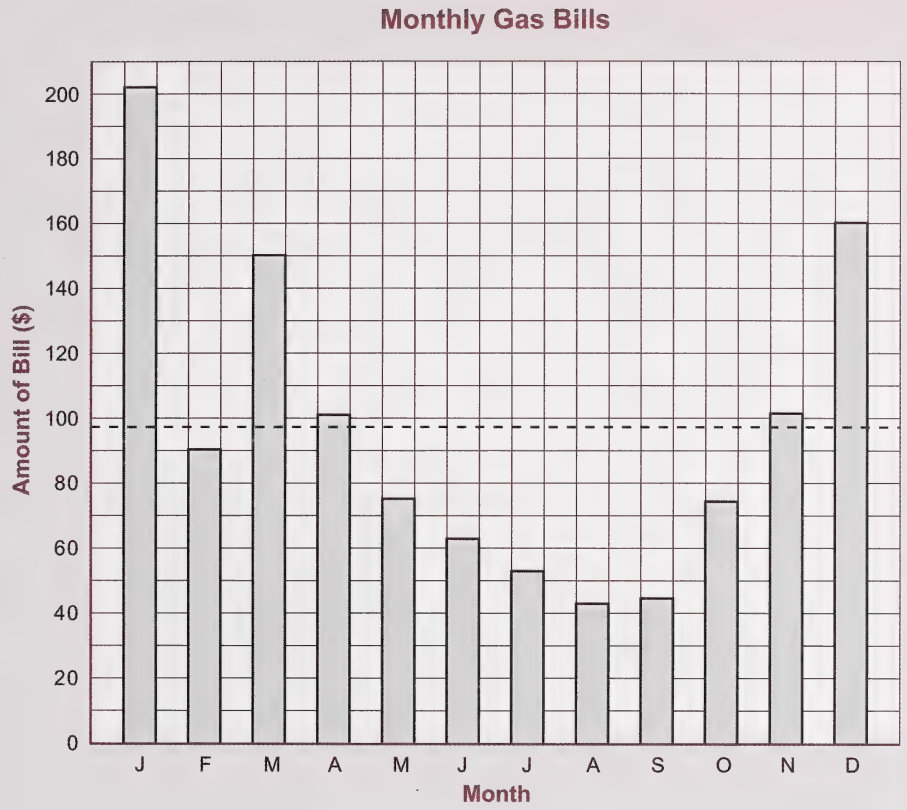
7. Jade's share of the groceries is $280 ÷ 3 ≐ $93.33.

Lunches and restaurants are another $60.00 + $40.00 = $100.00 per month.

She should budget about $195.00 per month for food.

2. Textbook, pages 36 to 39, "Put into Practice," questions 3, 5, 6, and 8

3. a.



b. The bills are highest in winter and lowest in summer because the Kendricks heat their home with gas.

c. The total annual cost for gas is $1166.46.

d. Their monthly cost is $1166.46 ÷ 12 ≐ $97.21.

e. Some advantages of the equalization plan include the following:

- It reduces the monthly bills in winter.
- The homeowner can easily calculate his or her monthly gas costs.

There is a spreadsheet called Mod_1_3.xls in the Spreadsheets folder on the multimedia CD. It shows how the above graph and calculations can be found using a spreadsheet.

5. Answers may vary. A sample answer is given. Use the budget guidelines on page 28 in your textbook.

Category	Percent	Amount
Housing	30%	$480.00
Utilities	5%	$80.00
Car	16%	$256.00
School	15.6%	$250.00
Food	18%	$288.00
Clothing	5%	$80.00
Miscellaneous	10.4%	$166.00

These budgeted amounts are closer to the guidelines on page 28 in your textbook.

6. a. You could use a spreadsheet like Mod_1_4.xls from the Spreadsheets folder on the multimedia CD to work on this question. Calculate the current percentages for each category. Their total expenditures are $3521.00 per month.

WELLMAN MONTHLY BUDGET

Category	Amount (%)
Housing/Mortgage	27%
Utilities	8%
Food	20%
Transportation	18%
Entertainment	9%
Clothing	7%
Health and Personal Care	5%
Savings	3%
Miscellaneous	3%

The percent calculation for housing/mortgage follows

$$\frac{950}{3521} = 0.2698\ldots$$
$$\doteq 27\%$$

Use this procedure for each category.

b. Answers will vary. A sample answer is given.

The Wellman family must budget for $950.00 + $300.00 = $1250.00 for their monthly mortgage payment. This amount is $\frac{\$1250.00}{\$3521.00} \doteq 35.5\%$ of their total expenditures and represents an increase of 35.5% – 27% = 8.5%.

They will have to decrease their expenses in other categories by this percentage. From the budget guidelines on page 28 in the textbook, entertainment is only 5%, clothing 5%, transportation 16%, and food 18%. This represents a saving of 4% + 2% + 2% + 2%, or 10%, or about 1.5% more than necessary.

Therefore, savings can be increased to 4.5%.

Following is a revised budget for the Wellman family.

WELLMAN MONTHLY BUDGET

Category	%	Amount
Housing/Mortgage	35.5%	$1250.00
Utilities	8%	$296.00
Food	18%	$630.00
Transportation	16%	$560.00
Entertainment	5%	$175.00
Clothing	5%	$175.00
Health and Personal Care	5%	$175.00
Savings	4.5%	$155.00
Miscellaneous	3%	$105.00
Total	100%	$3521.00

c. **Step 1:** Open a new spreadsheet.

Step 2: Enter the categories in column A and the percents in column B as shown on the next page.

Step 3: Click on the Chart Wizard icon in the menu bar.

Step 4: Select Pie from the list of graph types. Then click on Finish.

Step 5: Resize the graph if necessary.

	A	B	C	D
1	**Category**	**Percent of Monthly Income**		
2	Housing/Mortgage	35.5		
3	Utilities	8		
4	Food	18		
5	Transportation	16		
6	Entertainment	5		
7	Clothing	5		
8	Health and Personal Care	5		
9	Savings	4.5		
10	Miscellaneous	3		
11				
12				
13				
14				
15				
16				
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22				
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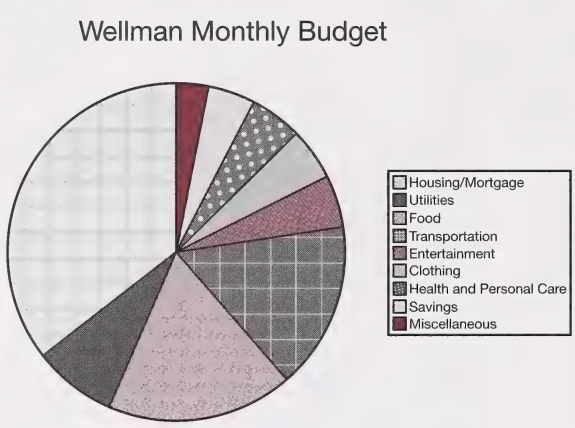
25				
26				



8.

Hughes Family Monthly Budget

Month: *June* **Monthly Income:** $4000.00

Monthly Fixed Expenses	
Rent/Mortgage	$892.00
Car/Truck Payment	$719.00
Life Insurance	$85.50
Car Insurance	$143.68
Home Insurance	$42.15
Other	
Entertainment	
Movies/Theatres	$40.00
Sporting Events	
Concerts	
Recreation	
Dining Out	$150.00
Other *Video Rentals*	$30.00
Fees/Taxes	
Property Taxes	$166.50
Vehicle Registration	
Charitable Donations	$25.00
Bank Fees	$14.50
Savings/Investment	
Savings Account	
RRSP	$150.00
Stocks/Bonds	
Emergency Fund	
Other *Pet Food*	$17.00
Cable TV	$36.00

Flexible Living Expenses	
Food	$478.00
Household Expenses	
Electricity/Utilities	$102.88
Heating	$60.00
Telephone	$52.00
Other *Cell Phone*	$30.00
Transportation	
Gas/Oil	$185.00
Repairs	
Parking	$40.00
Bus/Taxi	
Personal Spending	
Clothing	
Credit Card Payment	$240.00
Newspapers/Books	$16.25
Gifts	
Health Care	
Other *Swimming Pass*	$40.00

Monthly Balance Calculations

Net Income:	$4000.00
Total Monthly Spending:	$3755.46
Monthly Balance:	$244.54

Lesson 2: Shopping at Home and Abroad

1. Textbook, page 43, "Investigation 1: Calculate Again"

Case of soup (12 cans): $6.99

3 cans for $1.99: $1.99 × 4 = $7.96 for 12 cans

The better buy is the case of soup for $6.99.

2. Textbook, pages 44 and 45, "Put into Practice," questions 1 to 5

1. a. One tube of toothpaste costs $1.96 ÷ 4 = $0.49.
b. One can of pasta costs $5.88 ÷ 6 = $0.98.
c. One box of tissue costs $3.88 ÷ 2 = $1.94.
d. One jar of pickles costs $8.99 ÷ 4 ≐ $2.25.
e. One litre of orange juice costs $5.98 ÷ 4 ≐ $1.50.
f. One kilogram of apples costs $8.78 ÷ 2.5 ≐ $3.52.

2. a. 2 taco dinner kits cost $6.98.
1 taco dinner kit costs $6.98 ÷ 2 = $3.49.
∴ 3 taco dinner kits cost $3.49 × 3 = $10.47.

b. 2 cobs of corn cost $1.00.
1 cob of corn costs $1.00 ÷ 2 = $0.50.
∴ 7 cobs of corn cost $0.50 × 7 = $3.50.

c. 2 bags of carrots cost $4.70.
1 bag of carrots costs $4.70 ÷ 2 = $2.35.
4 bags of carrots cost $2.35 × 4 = $9.40.

d. 2 cantaloupes cost $3.96.
1 cantaloupe costs $3.96 ÷ 2 = $1.98.
5 cantaloupes cost $1.98 × 5 = $9.90.

e. 1 kg of ground beef costs $3.86.
2.4 kg of ground beef cost $3.86 × 2.4 ≐ $9.27.

f. 3 bunches of green onions cost $1.49.
1 bunch of green onions cost $1.49 ÷ 3 ≐ $0.50.

g. 100 g of almonds cost $1.68.
1 kg or 1000 g of almonds cost $1.68 × 10 = $16.80.
2.2 kg of almonds cost $16.80 × 2.2 = $36.96.

h. 100 g of ham cost $1.79.
1 kg or 1000 g of ham cost $1.79 × 10 = $17.90.
1.4 kg of ham costs $17.90 × 1.4 = $25.06.

3. a. A 4-kg box costs $26.36 or $26.36 ÷ 4 = $6.59/kg.
∴ A 4-kg box of chicken breasts is the better buy.

b. 2 cases of pop cost $6.98 or $6.98/case ÷ 2 = $3.49/case.

3 cases of pop cost $10.00 or $10.00/case ÷ 3 = $3.34/case. (Stores normally round up partial cent values.)

∴ 3 cases of pop is the better buy.

c. 907 mL of dishwashing liquid costs $2.29 or $2.29 ÷ 9.07 = $0.252 for 100 mL.
1.5 L or 1500 mL of dishwashing soap costs $3.90 or $3.90 ÷ 15 = $0.26 for 100 mL.
∴ the 907-mL size is the better buy.

d. 900 g of dog food cost $2.69 or $2.69 ÷ 9 ≐ $0.299 = 29.9¢ for 100 g.

12.5 kg or 12 500 g of dog food cost $37.15 or $37.15 ÷ 125 = $0.2972 = 29.72¢ for 100 g.

∴ The 12.5-kg size is the better buy.

4. 10 kg of potatoes cost $6.48. With the coupon, 10 kg cost $5.48 or $5.48/kg ÷ 10 = $0.548/kg = 54.8¢/kg.

20 kg of potatoes cost $12.60. With the coupon, 20 kg cost $11.60 or $11.60/kg ÷ 20 = $0.58/kg = 58¢/kg.

∴ The 10-kg size with the "$1.00 off" coupon is the better buy.

5. The better buy is not necessarily the more economical buy if you have to purchase such a large quantity that a portion of your purchase will spoil before you can use it.

3. At the first supermarket, 6 mangoes cost $4.99.

$4.99 ÷ 6 ≐ $0.8316 each
≐ 83.16¢ each

At the second supermarket, 10 mangoes cost $8.99.

$8.99 ÷ 10 = $0.899 each
= 89.9¢ each

At the store where he usually shops, mangoes cost $1.09 each.

The first supermarket has the best buy.

4. Textbook, pages 46 and 47, "Put into Practice," questions 6 to 10

6. The information in the table on page 46 in the textbook can be expressed in many different ways.

	Can ($)	US ($)	Euro (€)	Mex (new peso)	Swiss (franc)
Can$1 =		0.65	0.69	6.37	1.02
US$1 =	1.53				
€1 =	1.45				
1 Mex (new peso) =	0.16				
1 Swiss (franc) =	0.98				

For example, the highlighted part of the table can be expressed in the following ways:

- $\frac{\text{Can\$1.53}}{\text{US\$1}} = 1$
- $\frac{\text{US\$1}}{\text{Can\$1}} = 1.53$
- $\frac{\text{US\$1}}{\text{Can\$1.53}} = 1$
- US$1 = Can$1.53

a. $\frac{\text{US\$1}}{\text{Can\$1}} = 1.53$

b. $\frac{\text{Can\$1}}{\text{US\$1}} = 0.65$

c. Let x be the needed amount of Canadian funds.

$$\frac{x}{\text{US\$500}} = 1$$

$$\frac{x}{\text{US\$500}} = \frac{\text{Can\$1.53}}{\text{US\$1}}$$

$$\frac{\overset{1}{\cancel{\text{US\$500}}} \times x}{\underset{1}{\cancel{\text{US\$500}}}} = \frac{\overset{500}{\cancel{\text{US\$500}}} \times \text{Can\$1.53}}{\underset{1}{\cancel{\text{US\$1}}}}$$

$$x = 500 \times \text{Can\$1.53}$$

$$x = \text{Can\$765.00}$$

You would need Can$765.00 to buy US$500.00.

d. Let x be the amount of American funds needed.

$$\frac{x}{\text{Can\$150}} = 1$$

$$\frac{x}{\text{Can\$150}} = \frac{\text{US\$0.65}}{\text{Can\$1}}$$

$$\cancel{\text{Can\$150}} \times \frac{x}{\cancel{\text{Can\$150}}} = \cancel{\text{Can\$150}} \times \frac{\text{US\$0.65}}{\cancel{\text{Can\$1}}}$$

$$x = 150 \times \text{US\$0.65}$$

$$x = \text{US\$97.50}$$

Can\$150.00 is the same as US\$97.50.

e. $\dfrac{1 \text{ peso}}{\text{Can\$1}} = 0.16$

f. Let x be the cost in Canadian funds.

$$\frac{x}{500 \text{ pesos}} = 1$$

$$\frac{x}{500 \text{ pesos}} = \frac{\text{Can\$0.16}}{1 \text{ peso}}$$

$$\cancel{500 \text{ pesos}} \times \frac{x}{\cancel{500 \text{ pesos}}} = \cancel{500 \text{ pesos}} \times \frac{\text{Can\$0.16}}{\cancel{1 \text{ peso}}}$$

$$x = 500 \times \text{Can\$0.16}$$

$$x = \text{Can\$80.00}$$

500 pesos would cost Can\$80.00.

7. $\text{US\$1.00} = \text{Can\$1.53}$

$$\begin{aligned}\text{US\$59.99} &= \$59.99 \times \text{US\$1} \\ &= 59.99 \times \text{Can\$1.53} \\ &\doteq \text{Can\$91.78}\end{aligned}$$

The cost in Canadian dollars is \$91.78.

8. 1 Swiss franc = Can$0.98

100 Swiss francs = 100 × Can$0.98

= Can$98.00

Jeff would get $98.00 if he exchanged 100 Swiss francs for Canadian dollars.

9. 1 peso = Can$0.16

95 pesos = 95 × Can$0.16

= Can$15.20

Marika should declare a value of $15.20 in Canadian dollars.

10. €1 = Can$1.45

€500 = 500 × Can$1.45

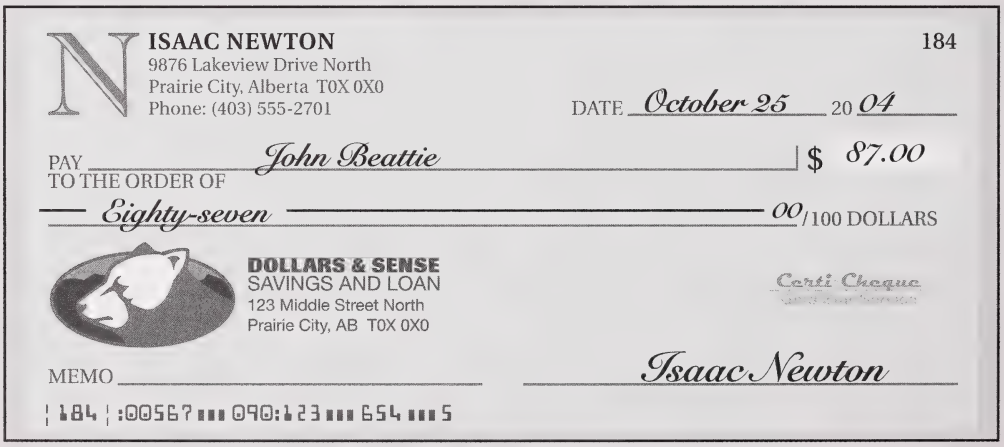
= Can$725.00

Jean should receive $725.00 in Canadian dollars.

Lesson 3: Banking

1. Textbook, page 51, "Investigation: Writing Cheques," question 1

1. a.



b.

ISAAC NEWTON
9876 Lakeview Drive North
Prairie City, Alberta T0X 0X0
Phone: (403) 555-2701

185

DATE October 25 20 04

PAY Marcia Grant | $ 37.27
TO THE ORDER OF

Thirty-seven 27/100 DOLLARS

DOLLARS & SENSE
SAVINGS AND LOAN
123 Middle Street North
Prairie City, AB T0X 0X0

Certi Cheque

MEMO

Isaac Newton

⑆185⑆ ⑈00567⑈ 090⑆123⑈ 654⑈ 5

c.

ISAAC NEWTON
9876 Lakeview Drive North
Prairie City, Alberta T0X 0X0
Phone: (403) 555-2701

186

DATE October 25 20 04

PAY The Math Store | $ 127.19
TO THE ORDER OF

One hundred twenty-seven 19/100 DOLLARS

DOLLARS & SENSE
SAVINGS AND LOAN
123 Middle Street North
Prairie City, AB T0X 0X0

Certi Cheque

MEMO

Isaac Newton

⑆186⑆ ⑈00567⑈ 090⑆123⑈ 654⑈ 5

d.

ISAAC NEWTON
9876 Lakeview Drive North
Prairie City, Alberta T0X 0X0
Phone: (403) 555-2701

187

DATE October 25 20 04

PAY The Furniture Store | $ 875.64
TO THE ORDER OF

Eight hundred seventy-five 64/100 DOLLARS

DOLLARS & SENSE
SAVINGS AND LOAN
123 Middle Street North
Prairie City, AB T0X 0X0

Certi Cheque

MEMO

Isaac Newton

⑆187⑆ ⑈00567⑈ 090⑆123⑈ 654⑈ 5

2. Differences may arise because of errors in the arithmetic, errors in the entries in your chequebook, failure to account for all deposits and debits, and failure to account for service charges or interest earned.

3. Textbook, pages 54 to 57, "Put into Practice," questions 1 to 7

1. Answers may vary. A sample answer is given.

Date	Description	Debits ($)	Credits ($)	Balance ($)
13-Sept	Balance Forward			1280.00
13-Sept	Mortgage	1200.00		80.00
14-Sept	#203	250.00		–170.00
14-Sept	Paycheque		600.00	430.00
15-Sept	Transfer		400.00	830.00
15-Sept	#204	500.00		330.00
16-Sept	#205	300.00		30.00
22-Sept	Service Charges	20.00		10.00

Did you remember to round debits up and credits down so that your estimated balance will be less than your actual balance? You must err on the side of caution to avoid writing cheques with insufficient funds in your account.

2. Find the total for the cheques.

$\$154.00 + \$32.04 + \$254.50 = \$440.54$

Subtract $60.00 for your cash withdrawal.

$\$440.54 - \$60.00 = \$380.54$

The amount of your net deposit is $380.54.

3.

Date	Description	Debits ($)	Credits ($)	Balance ($)
01-Sept	Balance			1090.00
12-Sept	#115	790.00		300.00
14-Sept	#116	310.00		–10.00
15-Sept	Deposit		710.00	700.00
20-Sept	#117	20.00		680.00
25-Sept	Transfer		110.00	790.00

The estimated balance is $790.00.

4. **Step 1:** Check which items on the statement differ from or do not appear in Jerian's record book.

Jerian should have recorded his paycheque as $156.00, not $166.00. Jerian should enter another line below his last entry in his record book.

	03-09	paycheque entry error	10.00	1114.05

Jerian should also enter the transactions in his record book for having cheques printed and service charges.

	03-17	printed cheques	10.00	1104.05
	03-30	service charges	11.00	1093.05

Step 2: Add the deposit for his March 30 paycheque to the final balance shown on the statement.

$$\text{final balance on statement} + \text{deposit} = \$453.05 + \$1200.00$$
$$= \$1653.05$$

Step 3: Subtract the cheque to Grove Management from the total in Step 2.

$$\$1653.05 - \$550.00 = \$1103.05$$

Step 4: There is still a difference of $10.00 between Jerian's record book and the statement from the financial institution.

Step 5: Check for arithmetical errors. There is an error of $10.00 in the statement. The balance on March 17, after the $50.00 cheque was processed, should be $479.05 instead of $489.05.

Jerian should contact his financial institution as soon as possible to correct this error.

5.

Date	Description	Amount ($)	Balance ($)
09-05	sale of goods	200.00	200.00
09-07	courier charges	30.00	170.00
09-12	postage	10.49	159.51
09-15	printer cartridge	69.99	89.52
09-16	sale of goods	400.00	489.52
09-25	office supplies	25.00	464.52
09-28	sale of goods	75.00	539.52

The final balance for the month is $539.52.

6. a.
$$\begin{array}{r} 201.00 \\ 150.00 \\ \hline 351.00 \end{array}$$

The total of the credits is $351.00.

b.
$$\begin{array}{r} 78.98 \\ 40.00 \\ 15.62 \\ 20.32 \\ 64.19 \\ 30.00 \\ 29.00 \\ 2.00 \\ \hline 280.11 \end{array}$$

The total of the debits is $280.11.

c. opening balance + credits − debits = $655.28 + $351.00 − $280.11
= $726.17

The balance for November is $726.17.

d. If you have multiple transactions, it may be to your advantage to pay a flat-rate transaction fee. If you have only a few transactions, it may be better to pay a fee per transaction.

7. The total of Chris's deposits is $2200.00 + $72.98 = $2272.98.

   The total of Chris's debits is $2137.76.

   Chris has $2272.98 – $2137.76 = $135.22 left for savings and discretionary spending. She should save as much as possible each month to set enough aside for emergencies and unforeseen expenses.

Section 3: Interest

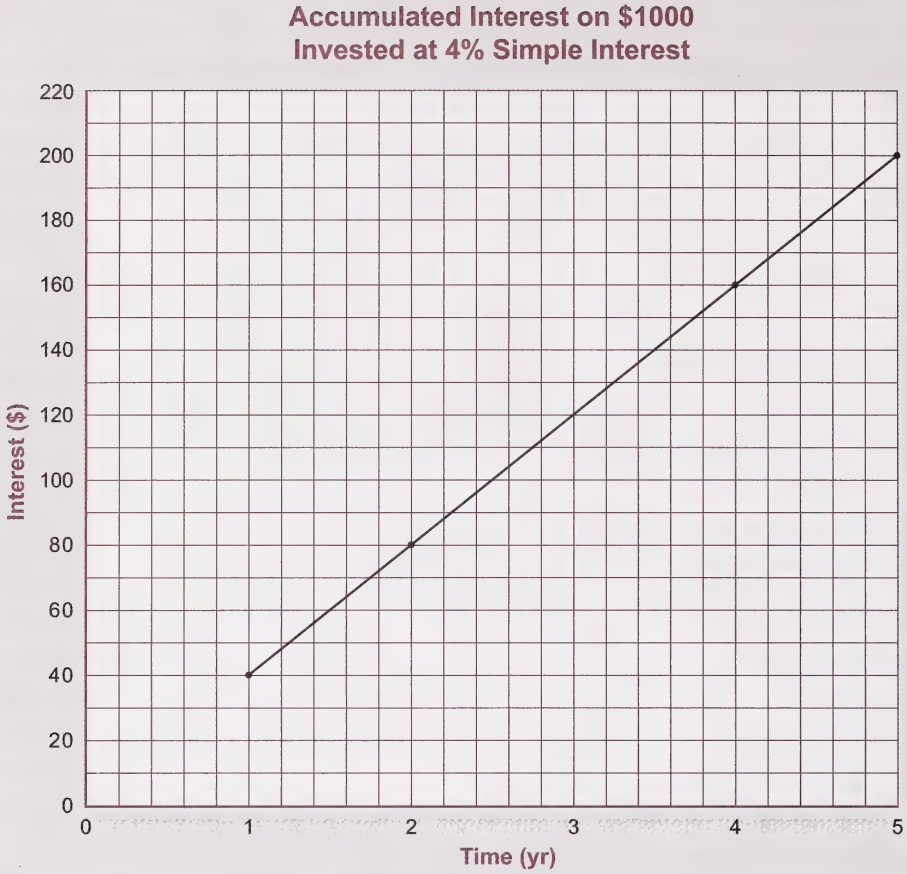
Lesson 1: Simple Interest

1. Textbook, pages 59 and 60, "Investigation: How much can I earn from simple interest?", questions 1 to 4

1.

Time (t)	Interest Earned ($)	Total at End of Time Period ($)
1 year	40.00	1040.00
2 years	80.00	1080.00
4 years	160.00	1160.00
5 years	200.00	1200.00
6 months	20.00	1020.00
3 months	10.00	1010.00
1 month	3.33	1003.33
1 day	0.11	1000.11
25 days	2.74	1002.74

2. a.



b. The graph is a straight line.

3. a. $I = 1000 \times 0.04 \times (\text{number of years})$

b. The order of the factors may differ.

c. $I = 2000 \times 0.04 \times t$

d. $I = P \times 0.04 \times t$

e. The order of the factors may differ.

4. a. $I = 1000 \times 0.05 \times t$

b. The order of the factors may differ.

c. $I = 2000 \times 0.05 \times t$

d. $I = 2000 \times \frac{r}{100} \times t$

e. $I = P \times \frac{r}{100} \times t$

2. Textbook, pages 62 and 63, "Put into Practice," questions 1, 3, 4, and 5

1. a. $P = 100 \quad r = 6\% = 0.06 \quad t = 1$

$$\begin{aligned} I &= Prt \\ &= 100 \times 0.06 \times 1 \\ &= 6 \end{aligned}$$

The interest is $6.00.

b. $P = 1200 \quad r = 4.50\% = 0.045 \quad t = 0.5$

$$\begin{aligned} I &= Prt \\ &= 1200 \times 0.045 \times 0.5 \\ &= 27 \end{aligned}$$

The interest is $27.00.

c. $P = 1200 \quad r = 4.50\% = 0.045 \quad t = \frac{6}{12} = 0.5$

$$\begin{aligned} I &= Prt \\ &= 1200 \times 0.045 \times 0.5 \\ &= 27 \end{aligned}$$

The interest is $27.00.

d. $P = 2500 \quad r = 2.75\% = 0.0275 \quad t = 1.5$

$$\begin{aligned} I &= Prt \\ &= 2500 \times 0.0275 \times 1.5 \\ &= 103.125 \end{aligned}$$

The interest is $103.13.

e. $P = 2500 \quad r = 2\frac{3}{4}\% = 2.75\% = 0.0275 \quad t = 1.5$

$$\begin{aligned} I &= Prt \\ &= 2500 \times 0.0275 \times 1.5 \\ &= 103.125 \end{aligned}$$

The interest is $103.13.

f. $P = 400 \quad r = 9\% = 0.09 \quad t = \frac{9}{12} = 0.75$

$$\begin{aligned} I &= Prt \\ &= 400 \times 0.09 \times 0.75 \\ &= 27 \end{aligned}$$

The interest is $27.00.

g. $P = 5000 \quad r = 6\frac{1}{4}\% = 6.25\% = 0.0625 \quad t = 2$

$$\begin{aligned} I &= Prt \\ &= 5000 \times 0.0625 \times 2 \\ &= 625 \end{aligned}$$

The interest is $625.00.

h. $P = 9750 \quad r = 5.65\% = 0.0565 \quad t = \frac{18}{12} = 1.5$

$$\begin{aligned} I &= Prt \\ &= 9750 \times 0.0565 \times 1.5 \\ &= 826.3125 \end{aligned}$$

The interest is $826.31.

i. $P = 50 \quad r = 8\% = 0.08 \quad t = 2 \text{ years } 9 \text{ months} = 2\frac{9}{12} = 2.75$

$$\begin{aligned} I &= Prt \\ &= 50 \times 0.08 \times 2.75 \\ &= 11 \end{aligned}$$

The interest is $11.00.

j. $P = 389 \quad r = \frac{1}{2}\% = 0.5\% = 0.005 \quad t = 3$

$$\begin{aligned} I &= Prt \\ &= 389 \times 0.005 \times 3 \\ &= 5.835 \end{aligned}$$

The interest is $5.84.

k. $P = 1800 \quad r = 12.25\% = 0.1225 \quad t = \frac{27}{12} = 2.25$

$$\begin{aligned} I &= Prt \\ &= 1800 \times 0.1225 \times 2.25 \\ &= 496.125 \end{aligned}$$

The interest is $496.13.

l. $P = 1000 \quad r = 7.75\% = 0.0775 \quad t = \frac{30}{12} = 2.5$

$$\begin{aligned} I &= Prt \\ &= 1000 \times 0.0775 \times 2.5 \\ &= 193.75 \end{aligned}$$

The interest is $193.75.

3. a. $P = 900 \quad r = 4\% = 0.04 \quad t = \frac{2}{12} = \frac{1}{6}$

$$\begin{aligned} I &= Prt \\ &= 900 \times 0.04 \times \frac{1}{6} \\ &= 6 \end{aligned}$$

The interest is $6.00.

b. $P = 1\,000\,000 \quad r = 3.12\% = 0.0312 \quad t = \frac{1}{52}$

$$\begin{aligned} I &= Prt \\ &= 1\,000\,000 \times 0.0312 \times \frac{1}{52} \\ &= 600 \end{aligned}$$

The interest is $600.00.

4. a. Credit Card 1

Calculate the interest.

$P = 325 \quad r = 15\% = 0.15 \quad t = \frac{1}{12}$

$$\begin{aligned} I &= Prt \\ &= 325 \times 0.15 \times \frac{1}{12} \\ &= 4.0625 \end{aligned}$$

The interest is \$4.06.

Credit Card 2

Calculate the interest.

$P = 325 \quad r = 18\% = 0.18 \quad t = \frac{1}{12}$

$$\begin{aligned} I &= Prt \\ &= 325 \times 0.18 \times \frac{1}{12} \\ &= 4.875 \end{aligned}$$

The interest is \$4.88.

b. For the first card, you must pay \$4.06 in interest and \$25.00 ÷ 12 = \$2.08 in fees. This is \$4.06 + \$2.08 = \$6.14 in total. Therefore, the second card is cheaper for the \$325.00 cash advance because you pay only \$4.88 in interest and no fees.

c. A credit card is not the best way to borrow money because of the high interest rates charged. You can generally receive a much lower rate from a bank or other financial institution.

5. a. $P = 25\,900 \quad r = 2.5\% = 0.025 \quad t = 1$

$$\begin{aligned} I &= Prt \\ &= 25\,900 \times 0.025 \times 1 \\ &= 647.50 \end{aligned}$$

Patricia will receive \$647.50 in interest.

b. In the second year, as in the first year, Patricia will receive \$647.50 in interest on the bond.

Calculate her interest on her re-investment.

$$\begin{aligned} I &= Prt \\ &= 647.50 \times 0.025 \times 1 \\ &= 16.1875 \end{aligned}$$

The interest on the re-investment is \$16.19. At the end of the second year, Patricia will receive \$647.50 + \$16.19 = \$663.69 in interest altogether.

c. If she cashes her bonds, she will have \$25 900.00 + \$647.50 + \$663.69 = \$27 211.19 altogether.

3. Textbook, page 62, "Put into Practice," question 2

2. a. $P = 600 \quad r = 5.5\% = 0.055 \quad t = 4$

$$\begin{aligned} I &= Prt \\ &= 600 \times 0.055 \times 4 \\ &= 132 \end{aligned}$$

The interest is $132.00.

b. $r = 6.25\% = 0.0625 \quad t = 1 \quad I = 231.25$

$$\begin{aligned} I &= Prt \\ Prt &= I \\ P \times 0.0625 \times 1 &= 231.25 \\ \frac{0.0625 \times P}{0.0625} &= \frac{231.25}{0.0625} \\ P &= 3700 \end{aligned}$$

The principal is $3700.00.

c. $P = 1000 \quad r = 9\% = 0.09 \quad I = 180$

$$\begin{aligned} Prt &= I \\ 1000 \times 0.09 \times t &= 180 \\ 90 \times t &= 180 \\ \frac{90 \times t}{90} &= \frac{180}{90} \\ t &= 2 \end{aligned}$$

The time is 2 years.

d. $P = 500 \quad t = 5 \quad I = 250$

$$\begin{aligned} Prt &= I \\ 500 \times r \times 5 &= 250 \\ 2500 \times r &= 250 \\ \frac{2500 \times r}{2500} &= \frac{250}{2500} \\ r &= 0.10 \\ &= 10\% \end{aligned}$$

The interest rate is 10%.

e. $P = 12\,500 \quad r = 3\frac{1}{4}\% = 3.25\% = 0.0325 \quad t = 1.5$

$$\begin{aligned} I &= Prt \\ &= 12\,500 \times 0.0325 \times 1.5 \\ &= 609.375 \end{aligned}$$

The interest is $609.38.

Lesson 2: Compound Interest

1. Textbook, pages 64 to 67, "Investigation: How much can I earn from compound interest?", questions 1 to 8

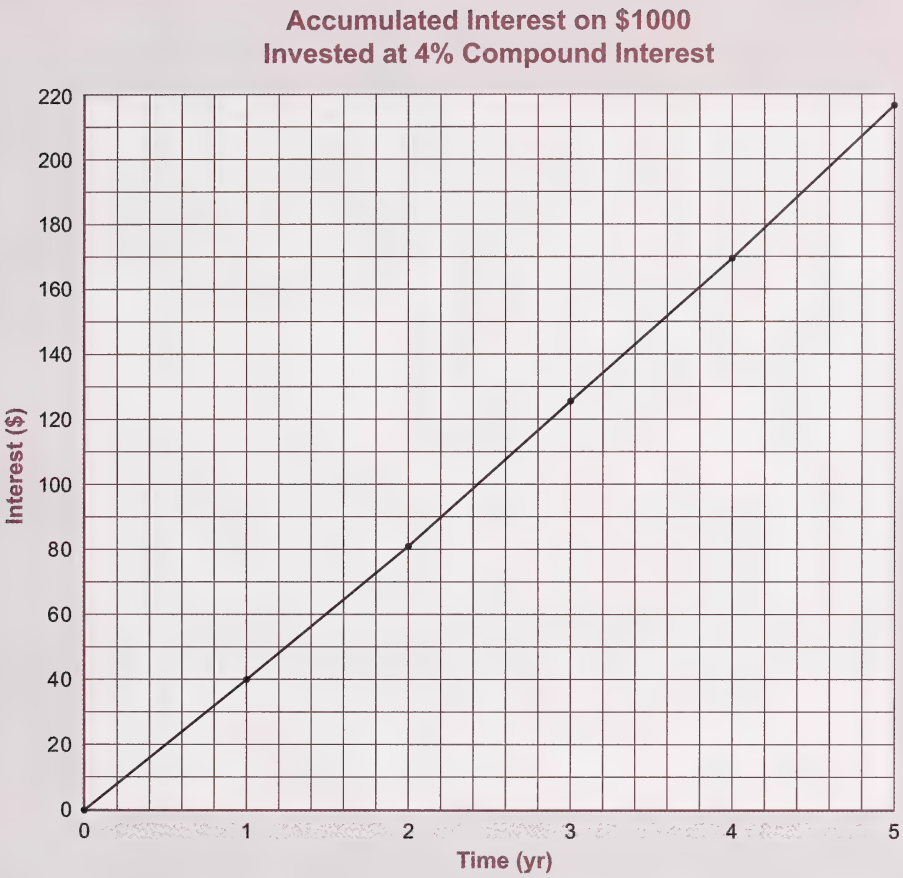
1.

Year	Principal at Beginning of Year	Interest ($)	Accumulated Total at the End of Year ($)	Accumulated Interest ($)
1	1000.00	40.00	1040.00	40.00
2	1040.00	41.60	1081.60	81.60
3	1081.60	43.26	1124.86	124.86
4	1124.86	44.99	1169.85	169.85
5	1169.85	46.79	1216.64	216.64

2. a. i. The interest at the end of 1 year is the same.
ii. Compound interest is $81.60 – $80.00 = $1.60 more.
iii. Compound interest is $216.64 – $200.00 = $16.64 more.

b. Compound interest earns more money for you because the interest you receive in turn earns interest.

3.



4. a. The graph for simple interest is a straight line. The graph for compound interest curves upward and increases more quickly than the graph of simple interest for the same interest rate.

b. Compound interest accumulates faster than simple interest because for compound interest, each time interest is earned, it is added to the principal. As a result, for compound interest, interest earned will itself earn interest in the next interest period.

5.

Year	Principal at Start of Year ($)	Interest Pattern ($)	Total at End of Year ($)
1	1000	$\times 0.04$	$1000+(1000\times 0.04)=1000(1.04)$
2	$1000(1.04)$	$\times 0.04$	$1000(1.04)+1000(1.04)(0.04)$ $=1000(1.04)(1+0.04)$ $=1000(1.04)(1.04)$ $=1000(1.04)^2$
3	$1000(1.04)^2$	$\times 0.04$	$1000(1.04)^3$
4	$1000(1.04)^3$	$\times 0.04$	$1000(1.04)^4$
5	$1000(1.04)^4$	$\times 0.04$	$1000(1.04)^5$

6. The total amount at the end of each year is the amount at the start of the year plus the interest earned in that year.

7.

Year	Calculating Total	Pattern	Accumulated Total at End of Year ($)
1	580	$\times 0.04$	$580\times 1.04=603.20$
2	580×1.04	$\times 0.04$	$580\times(1.04)^2=627.33$
3	$580\times(1.04)^2$	$\times 0.04$	$580\times(1.04)^3=652.42$
4	$580\times(1.04)^3$	$\times 0.04$	$580\times(1.04)^4=678.52$
5	$580\times(1.04)^4$	$\times 0.04$	$580\times(1.04)^5=705.66$

8.

Year	Calculating Total	Pattern	Accumulated Total at End of Year ($)
3	$(1000\times 1.04\times 1.04)\times 1.04$	$\times 1.04$	$1000\times 1.04^3=1124.86$
4	$(1000\times 1.04\times 1.04\times 1.04)\times 1.04$	$\times 1.04$	$1000\times 1.04^4=1169.86$
5	$(1000\times 1.04\times 1.04\times 1.04\times 1.04)\times 1.04$	$\times 1.04$	$1000\times 1.04^5=1216.65$
10		$\times 1.04$	$1000\times 1.04^{10}=1480.24$
y		$\times 1.04$	1000×1.04^y

2. Textbook, page 68, "Put into Practice," questions 1 and 2

1. a. $P = 2000 \quad i = 0.08 \quad n = 5$

$$\begin{aligned} A &= P(1+i)^n \\ &= 2000(1+0.08)^5 \\ &= 2000(1.08)^5 \\ &= 2938.656\ldots \end{aligned}$$

The amount after 5 years will be $2938.66.

b. $P = 8500 \quad i = 0.12 \quad n = 2$

$$\begin{aligned} A &= P(1+i)^n \\ &= 8500(1+0.12)^2 \\ &= 8500(1.12)^2 \\ &= 10\,662.40 \end{aligned}$$

The amount after 2 years will be $10 662.40.

c. $P = 500 \quad i = 0.045 \quad n = 12$

$$\begin{aligned} A &= P(1+i)^n \\ &= 500(1+0.045)^{12} \\ &= 500(1.045)^{12} \\ &= 847.940\ldots \end{aligned}$$

The amount after 12 years will be $847.94.

d. $P = 5400 \quad i = 0.18 \quad n = 6$

$$\begin{aligned} A &= P(1+i)^n \\ &= 5400(1+0.18)^6 \\ &= 5400(1.18)^6 \\ &= 14\,577.592\ldots \end{aligned}$$

The amount after 6 years will be $14 577.59.

e. $P = 1\,000\,000 \quad i = 0.052 \quad n = 4$

$$\begin{aligned} A &= P(1+i)^n \\ &= 1\,000\,000(1+0.052)^4 \\ &= 1\,000\,000(1.052)^4 \\ &= 1\,224\,793.744 \end{aligned}$$

The amount after 4 years will be $1 224 793.74.

2. a. $A = 2938.66 \quad P = 2000.00$

$$\begin{aligned} I &= A - P \\ &= 2938.66 - 2000.00 \\ &= 938.66 \end{aligned}$$

The interest earned is $938.66.

b. $A = 10\,662.40 \quad P = 8500.00$

$$\begin{aligned} I &= A - P \\ &= 10\,662.40 - 8500.00 \\ &= 2162.40 \end{aligned}$$

The interest earned is $2162.40.

c. $A = 847.94$ $P = 500.00$

$$\begin{aligned} I &= A - P \\ &= 847.94 - 500.00 \\ &= 347.94 \end{aligned}$$

The interest earned is \$347.94.

d. $A = 14\,577.59$ $P = 5400.00$

$$\begin{aligned} I &= A - P \\ &= 14\,577.59 - 5400.00 \\ &= 9177.59 \end{aligned}$$

The interest earned is \$9177.59.

e. $A = 1\,224\,793.74$ $P = 1\,000\,000.00$

$$\begin{aligned} I &= A - P \\ &= 1\,224\,793.74 - 1\,000\,000.00 \\ &= 224\,793.74 \end{aligned}$$

The interest earned is \$224 793.74.

3. Textbook, pages 69 to 71, "Investigation: What if interest is compounded more than once a year?", questions 1 to 5

1. a. 12% per year compounded monthly means 1% interest calculated every month.

$$\frac{12\%}{1\text{ a}} = \frac{12\%}{1\text{ a}} \times \frac{1\text{ a}}{12\text{ mon}} \text{ or } \frac{12\%}{12\text{ mon}} = 1\% \text{ per month}$$

b. 12% per year compounded quarterly means 3% interest calculated every three months.

$$\frac{12\%}{1\text{ a}} = \frac{12\%}{1\text{ a}} \times \frac{1\text{ a}}{4\text{ quarters}} \text{ or } \frac{12\%}{4\text{ quarters}} = 3\% \text{ per quarter}$$

c. 12% per year compounded daily means $\frac{12}{365}\%$ interest calculated every day. Daily interest should give the greatest amount of interest.

$$\frac{12\%}{1\text{ a}} = \frac{12\%}{1\text{ a}} \times \frac{1\text{ a}}{365\text{ days}} \text{ or } \frac{12\%}{365\text{ days}} = \frac{12\%}{365} \text{ per day}$$

2.

Time	Calculating Total	Pattern	Accumulated Total at End of Year ($)
6 months	1000	$\times 1.02$	$1000 \times 1.02 = 1020.00$
1 year	1000×1.02	$\times 1.02$	$1000 \times 1.02^2 = 1040.40$
1 year 6 months	1000×1.02^2	$\times 1.02$	$1000 \times 1.02^3 = 1061.21$
2 years	1000×1.02^3	$\times 1.02$	$1000 \times 1.02^4 = 1082.43$
2 years 6 months	1000×1.02^4	$\times 1.02$	$1000 \times 1.02^5 = 1104.08$
3 years	1000×1.02^5	$\times 1.02$	$1000 \times 1.02^6 = 1126.16$
5 years	1000×1.02^9	$\times 1.02$	$1000 \times 1.02^{10} = 1218.99$
10 years	1000×1.02^{19}	$\times 1.02$	$1000 \times 1.02^{20} = 1485.95$

3. If the interest is compounded semi-annually rather than annually, the additional interest earned is $1485.95 – $1480.24 = $5.71. Interest increases more rapidly when calculated semi-annually because you start earning interest on the interest after six months rather than a year.

4. If interest is compounded quarterly, the accumulated amount after ten years will be even higher because you start earning interest on the interest after three months rather than six months or a year.

5. **a.** This means the financial institution will calculate **1%** interest at the end of each compounding period (in this case **three** months) and add it to your principal.

b. **i.** $\$1000(1.01)^2 = \$1020.10$

ii. $\$1000(1.01)^3 = \$1030.30$

iii. $\$1000(1.01)^4 = \$1040.60$

c. $A = \$1000(1.01)^{40}$

$= \$1488.86$

4. Textbook, page 73, "Put into Practice," questions 1.a., 1.b., 1.c., 2.b., 2.c., 2.d., and 3

1. a. $i = \frac{12\%}{2} = 6\% = 0.06$

$n = 7 \times 2 = 14$

b. $i = \frac{12\%}{4} = 3\% = 0.03$

$n = 7 \times 4 = 28$

c. $i = \frac{12\%}{12} = 1\% = 0.01$

$n = 7 \times 12 = 84$

2. b. $P = 80\,000 \quad i = \frac{6\%}{12} = 0.5\% = 0.005 \quad n = 3 \times 12 = 36$

$$A = P(1+i)^n$$
$$= 80\,000(1.005)^{36}$$
$$= 95\,734.441\ldots$$

The amount is $95 734.44.

c. $P = 345 \quad i = \frac{22\%}{4} = 5.5\% = 0.055 \quad n = 9 \times 4 = 36$

$$A = P(1+i)^n$$
$$= 345(1.055)^{36}$$
$$= 2370.869\ldots$$

The amount is $2370.87.

d. $P = 56 \quad i = \frac{11\%}{2} = 5.5\% = 0.055 \quad n = 3$

$$A = P(1+i)^n$$
$$= 56(1.055)^3$$
$$= 65.757\ldots$$

The amount is $65.76.

3. a. Brittney earned the most interest because her interest was calculated daily.

b. Caitlin

$P = 1000 \quad i = 3\% = 0.03 \quad n = 5$

$$\begin{aligned} A &= P(1+i)^n \\ &= 1000(1.03)^5 \\ &= 1159.274\ldots \end{aligned}$$

Caitlin's investment is $1159.27.

Jacob

$P = 1000 \quad i = \dfrac{3\%}{12} = 0.25\% = 0.0025 \quad n = 5 \times 12 = 60$

$$\begin{aligned} A &= P(1+i)^n \\ &= 1000(1.0025)^{60} \\ &= 1161.616\ldots \end{aligned}$$

Jacob's investment is $1161.62.

Brittney

$P = 1000 \quad i = \dfrac{3\%}{365} = \dfrac{0.03}{365} \quad n = 5 \times 365 = 1825$

$$\begin{aligned} A &= P(1+i)^n \\ &= 1000\left(1+\frac{0.03}{365}\right)^{1825} \\ &= 1161.827 \end{aligned}$$

Brittney's investment is $1161.83.

5. Modify your compound interest as follows:

- Enter $3000 in cell B3.
- Enter 8 in cell B4
- Enter 4 in cell B5

Because there are 20 interest periods in 5 years, fill down to row 28.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$3000.00		
4	**Annual Interest Rate (%)**	8		
5	**Number of Periods Per Year**	4		
6	**Interest Rate Per Period (%)**	2		
7				
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$3000.00	$60.00	$3060.00
10	2	$3060.00	$61.20	$3121.20
11	3	$3121.20	$62.42	$3183.62
12	4	$3183.62	$63.67	$3247.29
13	5	$3247.29	$64.95	$3312.24
14	6	$3312.24	$66.24	$3378.48
15	7	$3378.48	$67.57	$3446.05
16	8	$3446.05	$68.92	$3514.97
17	9	$3514.97	$70.30	$3585.27
18	10	$3585.27	$71.71	$3656.98
19	11	$3656.98	$73.14	$3730.12
20	12	$3730.12	$74.60	$3804.72
21	13	$3804.72	$76.09	$3880.81
22	14	$3880.81	$77.62	$3958.43
23	15	$3958.43	$79.17	$4037.60
24	16	$4037.60	$80.75	$4118.35
25	17	$4118.35	$82.37	$4200.72
26	18	$4200.72	$84.01	$4284.73
27	19	$4284.73	$85.69	$4370.42
28	20	$4370.42	$87.41	$4457.83

The compound amount is $4457.83.

6. Textbook, page 78, "Put into Practice," questions 4, 5, and 6

4. a.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2000.00		
4	**Annual Interest Rate (%)**	10		
5	**Number of Periods Per Year**	1		
6	**Interest Rate Per Period (%)**	10		
7	**Number of Periods**	3		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2000.00	$200.00	$2200.00
10	2	$2200.00	$220.00	$2420.00
11	3	$2420.00	$242.00	$2662.00
12				

The compound interest is $2662.00 – $2000.00 = $662.00.

b.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$150.00		
4	**Annual Interest Rate (%)**	18		
5	**Number of Periods Per Year**	4		
6	**Annual Interest Rate (%)**	4.5		
7	**Number of Periods**	3		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$150.00	$6.75	$156.75
10	2	$156.75	$7.05	$163.80
11	3	$163.80	$7.37	$171.17
12				

The compound interest is $171.17 – $150.00 = $21.17.

c.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$23000.00		
4	**Annual Interest Rate (%)**	8		
5	**Number of Periods Per Year**	1		
6	**Interest Rate Per Period (%)**	8		
7	**Number of Periods**	15		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$23000.00	$1840.00	$24840.00
10	2	$24840.00	$1987.20	$26827.20
11	3	$26827.20	$2146.18	$28973.38
12	4	$28973.38	$2317.87	$31291.25
13	5	$31291.25	$2503.30	$33794.55
14	6	$33794.55	$2703.56	$36498.11
15	7	$36498.11	$2919.85	$39417.96
16	8	$39417.96	$3153.44	$42571.40
17	9	$42571.40	$3405.71	$45977.11
18	10	$45977.11	$3678.17	$49655.28
19	11	$49655.28	$3972.42	$53627.70
20	12	$53627.70	$4290.22	$57917.92
21	13	$57917.92	$4633.43	$62551.35
22	14	$62551.35	$5004.11	$67555.46
23	15	$67555.46	$5404.44	$72959.90

The compound interest is $72 959.90 – $23 000.00 = $49 959.90.

d.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$65000.00		
4	**Annual Interest Rate (%)**	14		
5	**Number of Periods Per Year**	12		
6	**Interest Rate Per Period (%)**	1.16666666666667		
7	**Number of Periods**	36		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$65000.00	$758.33	$65758.33
10	2	$65758.33	$767.18	$66525.51
11	3	$66525.51	$776.13	$67301.64
12	4	$67301.64	$785.19	$68086.83
13	5	$68086.83	$794.35	$68881.18
14	6	$68881.18	$803.61	$69684.79
15	7	$69684.79	$812.99	$70497.78
16	8	$70497.78	$822.47	$71320.25
17	9	$71320.25	$832.07	$72152.32
18	10	$72152.32	$841.78	$72994.10
19	11	$72994.10	$851.60	$73845.70
20	12	$73845.70	$861.53	$74707.23
21	13	$74707.23	$871.58	$75578.81
22	14	$75578.81	$881.75	$76460.56
23	15	$76460.56	$892.04	$77352.60
24	16	$77352.60	$902.45	$78255.05
25	17	$78255.05	$912.98	$79168.03
26	18	$79168.03	$923.63	$80091.66
27	19	$80091.66	$934.40	$81026.06
28	20	$81026.06	$945.30	$81971.36
29	21	$81971.36	$956.33	$82927.69
30	22	$82927.69	$967.49	$83895.18
31	23	$83895.18	$978.78	$84873.96
32	24	$84873.96	$990.20	$85864.16
33	25	$85864.16	$1001.75	$86865.91
34	26	$86865.91	$1013.44	$87879.35
35	27	$87879.35	$1025.26	$88904.61
36	28	$88904.61	$1037.22	$89941.83
37	29	$89941.83	$1049.32	$90991.15
38	30	$90991.15	$1061.56	$92052.71
39	31	$92052.71	$1073.95	$93126.66
40	32	$93126.66	$1086.48	$94213.14
41	33	$94213.14	$1099.15	$95312.29
42	34	$95312.29	$1111.98	$96424.27
43	35	$96424.27	$1124.95	$97549.22
44	36	$97549.22	$1138.07	$98687.29

The compound interest is $98 687.29 – $65 000.00 = $33 687.29.

e.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$9000.00		
4	**Annual Interest Rate (%)**	6.5		
5	**Number of Periods Per Year**	4		
6	**Interest Rate Per Period (%)**	1.625		
7	**Number of Periods**	4		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$9000.00	$146.25	$9146.25
10	2	$9146.25	$148.63	$9294.88
11	3	$9294.88	$151.04	$9445.92
12	4	$9445.92	$153.50	$9599.42

The compound interest is $9599.42 – $9000.00 = $599.42.

5. Option A

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2000.00		
4	**Annual Interest Rate (%)**	3		
5	**Number of Periods Per Year**	1		
6	**Interest Rate Per Period (%)**	3		
7	**Number of Periods**	10		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2000.00	$60.00	$2060.00
10	2	$2060.00	$61.80	$2121.80
11	3	$2121.80	$63.65	$2185.45
12	4	$2185.45	$65.56	$2251.01
13	5	$2251.01	$67.53	$2318.54
14	6	$2318.54	$69.56	$2388.10
15	7	$2388.10	$71.64	$2459.74
16	8	$2459.74	$73.79	$2533.53
17	9	$2533.53	$76.01	$2609.54
18	10	$2609.54	$78.29	$2687.83

For Option A, Tudor would make $2687.83 – $2000.00 = $687.83 in interest.

Option B

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$2000.00		
4	**Annual Interest Rate (%)**	2.5		
5	**Number of Periods Per Year**	4		
6	**Interest Rate Per Period (%)**	0.625		
7	**Number of Periods**	40		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$2000.00	$12.50	$2012.50
10	2	$2012.50	$12.58	$2025.08
11	3	$2025.08	$12.66	$2037.74
12	4	$2037.74	$12.74	$2050.48
13	5	$2050.48	$12.82	$2063.30
14	6	$2063.30	$12.90	$2076.20
15	7	$2076.20	$12.98	$2089.18
16	8	$2089.18	$13.06	$2102.24
17	9	$2102.24	$13.14	$2115.38
18	10	$2115.38	$13.22	$2128.60
19	11	$2128.60	$13.30	$2141.90
20	12	$2141.90	$13.39	$2155.29
21	13	$2155.29	$13.47	$2168.76
22	14	$2168.76	$13.55	$2182.31
23	15	$2182.31	$13.64	$2195.95
24	16	$2195.95	$13.72	$2209.67
25	17	$2209.67	$13.81	$2223.48
26	18	$2223.48	$13.90	$2237.38
27	19	$2237.38	$13.98	$2251.36
28	20	$2251.36	$14.07	$2265.43
29	21	$2265.43	$14.16	$2279.59
30	22	$2279.59	$14.25	$2293.84
31	23	$2293.84	$14.34	$2308.18
32	24	$2308.18	$14.43	$2322.61
33	25	$2322.61	$14.52	$2337.13
34	26	$2337.13	$14.61	$2351.74
35	27	$2351.74	$14.70	$2366.44
36	28	$2366.44	$14.79	$2381.23
37	29	$2381.23	$14.88	$2396.11
38	30	$2396.11	$14.98	$2411.09
39	31	$2411.09	$15.07	$2426.16
40	32	$2426.16	$15.16	$2441.32
41	33	$2441.32	$15.26	$2456.58
42	34	$2456.58	$15.35	$2471.93

43	35	$2471.93	$15.45	$2487.38
44	36	$2487.38	$15.55	$2502.93
45	37	$2502.93	$15.64	$2518.57
46	38	$2518.57	$15.74	$2534.31
47	39	$2534.31	$15.84	$2550.15
48	40	$2550.15	$15.94	$2566.09

For Option B, Tudor would earn $2566.09 – $2000.00 = $566.09 in interest.

6.

	A	B	C	D
1	**Compound Interest**			
2				
3	**Principal**	$13500.00		
4	**Annual Interest Rate (%)**	8.8		
5	**Number of Periods Per Year**	1		
6	**Interest Rate Per Period (%)**	8.8		
7	**Number of Periods**	4		
8	**Period**	**Opening Balance**	**Interest Earned**	**Closing Balance**
9	1	$13500.00	$1188.00	$14688.00
10	2	$14688.00	$1292.54	$15980.54
11	3	$15980.54	$1406.29	$17386.83
12	4	$17386.83	$1530.04	$18916.87

Maurice had to pay back $18 916.87.

Review

1. Textbook, pages 80 and 81, "Review of Unit One," questions 1 to 6

1.

Sewing 1 wedding dress	$1 \times \$350.00 = \$350.00$
Sewing 3 bridesmaid dresses	$3 \times \$100.00 = \$300.00$
Sewing 6 pairs of pants	$6 \times \$30.00 = \$180.00$
Altering 4 dresses	$4 \times \$13.00 = \$\ 52.00$
Hemming pants with cuffs	$15 \times \$7.00 = \$105.00$
Hemming pants	$12 \times \$5.00 = \$\ 60.00$
	Total = $1047.00

Jamie earned $1047.00.

2. a. Store A

If Nabila's sales are $51 000, the following would apply:

$$\begin{aligned}3.5\% \text{ of first } \$15\,000.00 &= 0.035 \times \$15\,000.00 \\ &= \$525.00\end{aligned}$$

$$\begin{aligned}5\% \text{ of sales above } \$15\,000.00 &= 0.05 \times (\$51\,000.00 - \$15\,000.00) \\ &= 0.05 \times \$36\,000.00 \\ &= \$1800.00\end{aligned}$$

Store A would pay Nabila $525.00 + $1800.00 = $2325.00.

Store B

If Nabila worked 160 hours, she would earn 160 h × $6.75/h = $1080.00. She would also earn 1.5% commission on all sales.

$$\begin{aligned}1.5\% \text{ of } \$51\,000.00 \text{ in sales} &= 0.015 \times \$51\,000.00 \\ &= \$765.00\end{aligned}$$

Store B would pay Nabila $1080.00 + $765.00 = $1845.00.

Therefore, Store A would pay Nabila more.

b. The advantage of working for the lower paying store is that Nabila is guaranteed an income based on $6.75/h. She has no such guarantee from Store A. If her monthly sales were low, Store B would pay her a higher income.

3.
$$\begin{aligned}\text{regular pay} &= 23 \text{ h} \times \$7.00/\text{h} \\ &= \$161.00\end{aligned}$$

$$\begin{aligned}\text{overtime pay} &= 6 \text{ h} \times \$7.00/\text{h} \times 1.5 \\ &= \$63.00\end{aligned}$$

$$\begin{aligned}\text{share of tips} &= 4\% \text{ of } \$2780.00 \\ &= 0.04 \times \$2780.00 \\ &= \$111.20\end{aligned}$$

Holly made $161.00 + $63.00 + $111.20 = $335.20 last week.

4.

Gross Pay ($)	Pay Period	CPP Deduction ($)	EI Deduction ($)	Federal Income Tax ($)	Provincial Income Tax ($)	Net Pay ($)
604.40	Weekly	28.41	13.30	96.70	60.44	405.55
1623.25	Biweekly	76.29	35.71	284.02	162.33	1064.90

The CPP deduction would be less if you used the $3500 decrease in yearly income before calculating the amount. The biweekly federal tax would be larger if you calculated it as 22% of gross pay. This table uses 16% of the first $31 677 and 22% of the remainder.

5. Nick's gross pay $= 70\text{ h} \times \$7.50/\text{h}$
$= \$525.00$

annual gross pay $= 26 \times \$525.00$
$= \$13\,650.00$

CPP contribution $= 4.7\%$ of $\$525.00$
$= 0.047 \times \$525.00$
$= \$24.68$

EI deduction $= 2.2\%$ of $\$525.00$
$= 0.022 \times \$525.00$
$= \$11.55$

annual federal income tax $= 16\%$ of $\$13\,650.00$
$= 0.16 \times \$13\,650.00$
$= \$2184.00$

biweekly federal income tax $= \$2184.00 \div 26$
$= \$84.00$

biweekly provincial income tax $= 10\%$ of $\$525.00$
$= 0.10 \times \$525.00$
$= \$52.50$

Nick's net pay $= \$525.00 - (\$24.68 + \$11.55 + \$84.00 + \$52.50)$
$= \$352.27$

6. Anna's annual gross pay $= 12 \times \$4800.00$
$= \$57\ 600.00$

Anna's annual union dues $= 12 \times \$70.00$
$= \$840.00$

Anna's annual RRSP contribution $= 12 \times \$200.00$
$= \$2400.00$

Anna's annual taxable income $= 57\ 600.00 - (\$840.00 + \$2400.00)$
$= \$54\ 360.00$

annual CPP deduction $= 4.7\%$ of $(\$57\ 600.00 - \$3500.00)$
$= 0.047 \times \$54\ 100.00$
$= \$2542.70$

This exceeds the annual maximum of \$1673.20. Therefore, Anna's monthly CPP contribution is $\$1673.20 \div 12 = \$139.43$.

Since Anna's earnings exceed \$39 000, her monthly EI contribution is \$71.50.

$= (2.2\%\ \text{of}\ \$39\ 000) \div 12$
$= (0.022 \times \$39\ 000) \div 12$
$= \$71.50$

federal tax on first \$31 677.00 $= 16\%$ of \$31 677.00
$= \$5068.32$

federal tax on amount over \$31 677.00 $= 22\%$ of $(\$54\ 360.00 - \$31\ 677.00)$
$= 0.22 \times \$22\ 683.00$
$= \$4990.26$

total annual federal tax $= \$5068.32 + \$4990.26$
$= \$10\ 058.58$

Anna's monthly federal tax $= \$10\ 058.58 \div 12$
$= \$838.22$

Anna's annual provincial tax = 10% of $54 360.00
= 0.10 × $54 360.00
= $5436.00

Anna's monthly provincial tax = $5436.00 ÷ 12
= $453.00

Gross Pay ($)	Tax Exempt Payroll Deductions	Other Payroll Deductions ($)	CPP Deduction ($)	EI Deduction ($)	Federal Income Tax ($)	Provincial Income Tax ($)	Net Pay ($)
$4800.00	$270.00	$130.00	$139.43	$71.50	$838.22	$453.00	$2897.85

Anna's net pay is about $2897.85.

2. Textbook, pages 81 to 85, "Review of Unit One," questions 7 to 13

7. Find the average Jumana spends per month on entertainment.

May:	$91.00
June:	$64.00
July:	$127.00
Total	$282.00

average = $282.00 ÷ 3 = $94.00

Jumana should put about $90.00 to $100.00 per month aside for entertainment.

8. a. Mike's monthly net income is $27 000.00 ÷ 12 = $2250.00.

b. transportation = 10% of monthly net income
= 0.10 × $2250.00
= $225.00

Mike spends $225.00 per month on transportation.

c. clothes = 7% of monthly net income
= 0.07 × $2250.00
= $157.50

To the nearest dollar, Mike spends $158.00 per month on clothes.

d. savings = 2% of monthly net income

$= 0.02 \times \$2250.00$

$= \$45.00$

Therefore, Mike will have to save for 2 months to purchase a CD player for $79.00.

9. a. One can of soup costs $\$5.46 \div 6 = \$0.91$.

b. cost of one tub of ice cream $= \$7.99 \div 2$

$= \$3.995$

$\doteq \$4.00$

c. 2 cartons cost $3.47.
1 carton costs $\$3.47 \div 2$.

$\therefore$ 3 cartons cost $3 \times (\$3.47 \div 2) = \$5.205$

$\doteq \$5.21$

d. 2.5 kg of chicken costs $2.5 \times \$7.49 = \$18.725$

$\doteq \$18.73$

10. a. Joanne paid $12.98 for 400 g or $\$12.98 \div 4 = \$3.245$/100 g.

Rick paid $20.77 for 700 g or $\$20.99 \div 7 = \$2.998\ldots$/100 g.

Rick got the better buy.

b. The box you would buy depends on your budget and if you can consume more than 400 g of chocolate almonds before they spoil.

11. a. Can$900 = 900 \times$ US$0.65

= US$585.00

b. Can$500 = 500 \times \$6.37$ pesos

= 3185 pesos

12.

Date	Description	Debits ($)	Credits ($)	Balance ($)
07-04	Balance Forward			506.98
07-04	Cheque #106	470.00		36.98
07-09	Drug Store	14.97		22.01
07-13	Gas Station	47.93		– 25.92
07-13	Groceries Unlimited	78.05		– 103.97
07-13	Clothing Depot	157.84		– 261.81
07-15	Biweekly Pay		697.00	435.19
07-15	Deposit		45.00	480.19
07-15	RRSP Contribution	100.00		380.19

13. a. Katie's new balance is

$$\$64.09 + \$17.90 + \$24.76 + \$167.98 - \$104.00 - \$40.00 = \$130.73.$$

Her balance increased.

b. Katie's new balance is $130.73.

3. Textbook, page 87, "Review of Unit One," questions 15 and 16

15.

	Principal ($)	Interest Rate	Time	Simple Interest ($)	
a.	500	6%	4 years	120	$I = 500 \times 0.06 \times 4$
b.	260	$2\frac{1}{2}\%$	3 months	1.63	$I = 260 \times 0.025 \times 3 \div 12$
c.	1583.90	7.3%	2 years	231.25	$231.25 = P \times 0.073 \times 2$
d.	1000	4.11%	4 months	13.70	$13.70 = 1000 \times r \times 4 \div 12$
e.	35	5%	10 years	17.50	$17.50 = 35 \times 0.05 \times t$

16. a. $P = 700 \quad i = \frac{6.75\%}{2} = 3.375\% = 0.033\,75 \quad n = 2 \times 3 = 6$

$$A = P(1+i)^n$$
$$= 700(1.033\,75)^6$$
$$= 854.262 \ldots$$

Joseph received $854.26.

b. Joseph earned $854.26 – $700.00 = $154.26 in interest.

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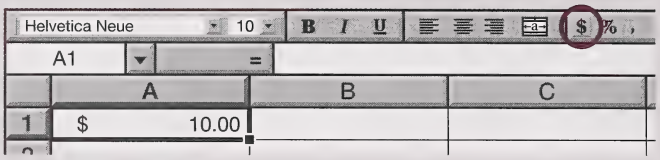
Spreadsheets

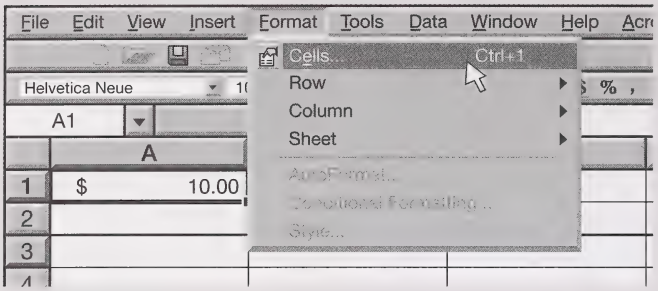
Following is a list of the spreadsheet templates for Module 1 that appear on the multimedia CD:

- Mod_1_1.xlt calculating gross pay using time and a half for overtime
- Mod_1_2.xlt displaying monthly budget guidelines
- Mod_1_3.xlt making a bar graph from gas bills
- Mod_1_4.xlt making a new budget after expenses change
- Mod_1_5.xlt making a new budget for the Wellmans
- Mod_1_6.xlt calculating compound interest (uses a macro)

Formatting Spreadsheets for Currency

Cells that contain dollar amounts should be formatted to show a dollar sign ($). You can do this by selecting the cell and pressing the **$** on the tool bar.



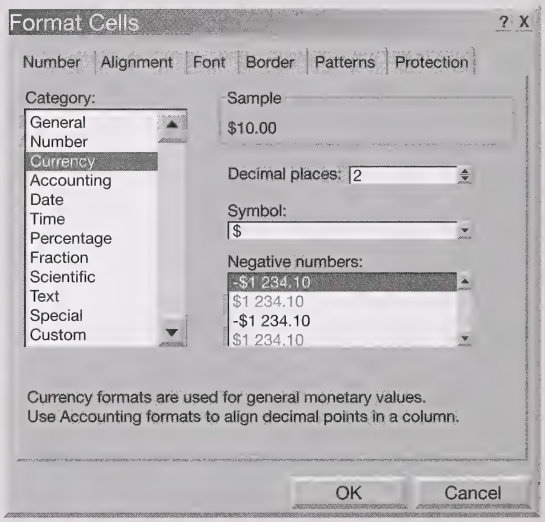


You can also do it by selecting the cell and using the menu bar as follows.

Choose Format, then Cells.

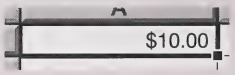
A dialogue box will appear.

- Select the Number tab.
- Under Category, choose Currency.
- Beside Decimal places, choose 2.
- Under Symbol, choose $.
- Finally click on the OK button.



The results are slightly different. The first method places a $ at the left side of the cell.

The second method places a $ directly in front of the first digit of the number.



When you are told to format a cell to show dollar amounts, you can choose whichever method you prefer.

Please answer the following question

Did you own or hold foreign property at any time in 2003 with a total cost of more than CAN$100,000? (read the "Foreign income" section in the guide for details) ..... 266 Yes ☐ 1 No ☐ 2

If *yes*, attach a completed Form T1135.

If you had dealings with a non-resident trust or corporation in 2003, see the "Foreign income" section in the guide.

As a Canadian resident, you have to report your income from all sources both inside and outside Canada.

Total income

Employment income (box 14 on all T4 slips)		101	23 068 50
Commissions included on line 101 (box 42 on all T4 slips)	102		
Other employment income		104 +	
Old Age Security pension (box 18 on the T4A(OAS) slip)		113 +	
CPP or QPP benefits (box 20 on the T4A(P) slip)		114 +	
Disability benefits included on line 114 (box 16 on the T4A(P) slip)	152		
Other pensions or superannuation		115 +	
Employment Insurance and other benefits (box 14 on the T4E slip)		119 +	
Taxable amount of dividends from taxable Canadian corporations (see the guide)		120 +	
Interest and other investment income (attach Schedule 4)		121 +	
Net partnership income: limited or non-active partners only (attach Schedule 4)		122 +	
Rental income Gross 160	Net	126 +	
Taxable capital gains (attach Schedule 3)		127 +	
Support payments received Total 156	Taxable amount	128 +	
RRSP income (from all T4RSP slips)		129 +	
Other income Specify:		130 +	
Self-employment income (see lines 135 to 143 in the guide)			
Business income Gross 162	Net	135 +	
Professional income Gross 164	Net	137 +	
Commission income Gross 166	Net	139 +	
Farming income Gross 168	Net	141 +	
Fishing income Gross 170	Net	143 +	
Workers' compensation benefits (box 10 on the T5007 slip)	144		
Social assistance payments	145 +		
Net federal supplements (box 21 on the T4A(OAS) slip)	146 +		
Add lines 144, 145, and 146 (see line 250 in the guide)	=	▶ 147 +	
Add lines 101, 104 to 143, and 147			
This is your **total income**.		150 =	23 068 50

Attach your Schedule 1 (federal tax), and Form 428 (provincial or territorial tax) here. Also attach here any other schedules, information slips, forms, receipts, and documents that you need to include with your return.

Net income

Enter your **total income** from line 150	150		23 068 50
Pension adjustment (box 52 on all T4 slips and box 34 on all T4A slips)	206		
Registered pension plan deduction (box 20 on all T4 slips and box 32 on all T4A slips)	207		
RRSP deduction (see Schedule 7; attach receipts)	208 +	1153 36	
Saskatchewan Pension Plan deduction (maximum $600)	209 +		
Annual union, professional, or like dues (box 44 on all T4 slips and receipts)	212 +	346 06	
Child care expenses (attach Form T778)	214 +		
Attendant care expenses	215 +		
Business investment loss Gross 228 / Allowable deduction	217 +		
Moving expenses	219 +		
Support payments made Total 230 / Allowable deduction	220 +		
Carrying charges and interest expenses (attach Schedule 4)	221 +		
Deduction for CPP or QPP contributions on self-employment and other earnings (attach Schedule 8)	222 +		
Exploration and development expenses (attach Form T1229)	224 +		
Other employment expenses	229 +		
Clergy residence deduction	231 +		
Other deductions Specify:	232 +		
Add lines 207 to 224, 229, 231, and 232.	233 =	1499 42	– 14 99 42
Line 150 minus line 233 (if negative, enter "0"). This is your **net income before adjustments**.	234 =		21 569 08
Social benefits repayment (if you reported income on line 113, 119, or 146, see line 235 in the guide)	235 –		
Line 234 minus line 235 (if negative, enter "0"). If you have a spouse or common-law partner, see line 236 in the guide. This is your **net income**.	236 =		21 569 08

Taxable income

Employee home relocation loan deduction (box 37 on all T4 slips)	248		
Security options deductions (stock option and shares)	249 +		
Other payments deduction (if you reported income on line 147, see line 250 in the guide)	250 +		
Limited partnership losses of other years	251 +		
Non-capital losses of other years	252 +		
Net capital losses of other years	253 +		
Capital gains deduction	254 +		
Northern residents deductions (attach Form T2222)	255 +		
Additional deductions Specify:	256 +		
Add lines 248 to 256.	257 =		–
Line 236 minus line 257 (if negative, enter "0") This is your **taxable income**.	260 =		21 569 08

Use your taxable income to calculate your federal tax on Schedule 1 and your provincial or territorial tax on Form 428.

T1-2003 **Federal Tax** **Schedule 1**

Complete this schedule to claim your federal non-refundable tax credits and to calculate your net federal tax.

You must attach a copy of this schedule to your return.

Enter your **taxable income** from line 260 of your return — 21 569 08 — 1

Use the amount on line 1 to determine which **ONE** of the following columns you have to complete.

If the amount on line 1 is:	$32,183 or less	more than $32,183 but not more than $64,368	more than $64,368 but not more than $104,648	more than $104,648
Enter the amount from line 1 above	21 569 08 — 2	— 2	— 2	— 2
Base amount	– 0 00 — 3	– 32 183 00 — 3	– 64 368 00 — 3	– 104 648 00 — 3
Line 2 minus line 3 (this amount cannot be negative)	= 21 569 08 — 4	= — 4	= — 4	= — 4
Rate	× 16% — 5	× 22% — 5	× 26% — 5	× 29% — 5
Multiply the amount on line 4 by the rate on line 5	= 3451 05 — 6	= — 6	= — 6	= — 6
Tax on base amount	+ 0 00 — 7	+ 5 149 00 — 7	+ 12 230 00 — 7	+ 22 703 00 — 7
Add lines 6 and 7	= 3451 05 — 8	= — 8	= — 8	= — 8

Federal non-refundable tax credits (Read the guide for details about these credits.)

Basic personal amount	**claim $7,756**	300	7756 00
Age amount (if you were born in 1938 or earlier)	(maximum $3,787)	301 +	
Spouse or common-law partner amount:			
Base amount	7 245 00		
Minus: his or her net income (from page 1 of your return)	–		
Result: (if negative, enter "0")	= (maximum $6,586) ▶	303 +	
Amount for an eligible dependant (attach Schedule 5)	(maximum $6,586)	305 +	
Amount for infirm dependants age 18 or older (attach Schedule 5)		306 +	
CPP or QPP contributions:			
through employment from box 16 and box 17 on all T4 slips	(maximum $1,801.80)	308 +	968 76 •
on self-employment and other earnings (from Schedule 8)		310 +	•
Employment Insurance premiums from box 18 on all T4 slips	(maximum $819.00)	312 +	484 38 •
Pension income amount	(maximum $1,000)	314 +	
Caregiver amount (attach Schedule 5)		315 +	
Disability amount		316 +	
Disability amount transferred from a dependant		318 +	
Interest paid on your student loans		319 +	
Tuition and education amounts (attach Schedule 11)		323 +	
Tuition and education amounts transferred from a child		324 +	
Amounts transferred from your spouse or common-law partner (attach Schedule 2)		326 +	
Medical expenses (attach receipts)	330		
Minus: $1,755 or 3% of line 236, whichever is **less**	–		
Subtotal	=		
Minus: Medical expenses adjustment	331 –		
Allowable portion of medical expenses (if negative, enter "0")	= ▶	332 +	
Add lines 300 to 326, and 332.		335 =	9209 14
Multiply the amount on line 335 by 16% =		338	1473 46
Donations and gifts	(attach Schedule 9)	349 +	
Total federal non-refundable tax credits: Add lines 338 and 349.		350 =	1473 46

continue on the back ⇨

Net federal tax

Enter the amount from line 8 on the other side			3451 05	9	
Federal tax on split income (from line 4 of Form T1206)	424	+		•10	
Add lines 9 and 10		=	3451 05	▶	3451 05 11
Enter the amount from line 350 on the other side	350		1473 46		
Federal dividend tax credit (13.3333% of the amount on line 120 of your return)	425	+		•	
Overseas employment tax credit (attach Form T626)	426	+			
Minimum tax carry-over	427	+		•	
Add lines 350, 425, 426, and 427		=	1473 46	▶	– 1473 46 12
Basic federal tax: Line 11 minus line 12 (if negative, enter "0")	429	=			1977 59 13
Federal foreign tax credit: Complete the federal foreign tax credit calculation below and enter the amount from line (i) or line (ii), whichever is **less**					– 14
Federal tax: Line 13 minus line 14 (if negative, enter "0")	406	=			1977 59 15
Total federal political contributions (attach receipts)	409				
Federal political contribution tax credit (see the guide)	410			•	
Investment tax credit (attach Form T2038(IND))	412	+		•	
Labour-sponsored funds tax credit — Net cost 413 / Allowable credit 414		+		•	
Add lines 410, 412, and 414.	416	=		▶	– 16
Line 15 minus line 16 (if negative, enter "0") (if you have an amount on line 424 above, see Form T1206)	417	=			17
Additional tax on RESP accumulated income payments (attach Form T1172)	418	+			18
Net federal tax: Add lines 17 and 18. Enter this amount on line 420 of your return.	420	=			1977 59 19

Federal foreign tax credit: (see lines 431 and 433 in the guide)

Make a separate calculation for each foreign country. Enter the result on line 14 above.

Non-business-income tax paid to a foreign country 431 •(i)

Net foreign non-business income * 433 / Net income ** X Basic federal tax *** = (ii)

* Reduce this amount by any income from that foreign country for which you claimed a capital gains deduction, and by any income from that country that was, under a tax treaty, either exempt from tax in that country or deductible as exempt income in Canada (included on line 256). Also reduce this amount by the lesser of lines E and F on Form T626.

** Line 236 plus the amount on line 3 of Form T1206, minus the total of the amounts on lines 248, 249, 250, 253, 254, and minus any amount included on line 256 for foreign income deductible as exempt income under a tax treaty, income deductible as net employment income from a prescribed international organization, or non-taxable tuition assistance from box 21 of the T4E slip. If the result is less than the amount on line 433, enter your **Basic federal tax*** ** on line (ii).

*** Line 429 plus the amount on lines 425 and 426, and minus any refundable Quebec abatement (line 440) and any federal refundable First Nations abatement (line 441 on the return for residents of Yukon).

Alberta

Alberta Tax and Credits

AB428
T1 General – 2003

Complete this form and **attach a copy** of it to your return. For details, see pages 1 to 4 in the forms book.

Alberta tax

Enter your **taxable income** from line 260 of your return			21 569 08	1
Alberta income tax rate		×	10%	2
Multiply line 1 by line 2	**Tax on taxable income**	=	2156 91	3
Alberta tax on split income from Form T1206	6151	+		• 4
Add lines 3 and 4		=	2156 91	5

Alberta non-refundable tax credits

Important: Provincial non-refundable tax credits may be **different** from the federal amounts claimed on Schedule 1. For details, see the *Provincial Worksheet* and pages 1 to 3 in the forms book.

	For internal use only	5608			
Basic personal amount	**claim $13,525**	5804	13 525 00		6
Age amount (if born in 1938 or earlier)	(use provincial worksheet)	5808	+		7
Spouse or common-law partner amount					
Base amount	13,525 00				
Minus: his or her net income from page 1 of your return	–				
Result: (if negative, enter "0")	=	▶ 5812	+		8
Amount for an eligible dependant:					
Base amount	13,525 00				
Minus: his or her net income from line 236 of the return	–				
Result: (if negative, enter "0")	=	▶ 5816	+		9
Amount for infirm dependants age 18 or older	(use provincial worksheet)	5820	+		10
Canada Pension Plan or Quebec Pension Plan contributions					
	(amount from line 308 of your federal Schedule 1)	5824	+	968 76	• 11
	(amount from line 310 of your federal Schedule 1)	5828	+		• 12
Employment Insurance premiums	(amount from line 312 of your federal Schedule 1)	5832	+	484 38	• 13
Pension income amount	(use provincial worksheet)	5836	+		14
Caregiver amount	(use provincial worksheet)	5840	+		15
Disability amount	(see line 5844 on page 2 in your forms book)	5844	+		16
Disability amount transferred from a dependant					
	(use provincial worksheet)	5848	+		17
Interest paid on your student loan	(amount from line 319 of your federal Schedule 1)	5852	+		18
Your tuition and education amounts	[attach Schedule AB(S11)]	5856	+		19
Tuition and education amounts transferred from a child		5860	+		20
Amounts transferred from your spouse or common-law partner	[attach Schedule AB(S2)]	5864	+		21
Medical expenses	5868				22
Enter $1,759 or 3% of line 236, whichever is **less**	–				23
Line 22 minus line 23 (if negative, enter "0")	=				24
Medical expenses adjustment	(use provincial worksheet) 5872	–			25
Line 24 minus line 25 (if negative, enter "0")	5876 =	▶	+		26
Add lines 6 through 21, and line 26		5880	=	14 978 14	27
Non-refundable tax credit rate			×	10%	28
Multiply line 27 by line 28		5884	=	1497 81	29
Donations and gifts:					
Amount from line 345 of your federal Schedule 9	× 10% =				30
Amount from line 347 of your federal Schedule 9	× 12.75% =	+			31
Add lines 30 and 31	5896	=	▶	+	32
Add lines 29 and 32	**Alberta non-refundable tax credits**	6150	=	1497 81	▶ – 1497 81 33
Line 5 minus line 33 (if negative, enter "0")					= 659 10 34

Continue on the back ⇨

Alberta tax *(continued)*

Enter the amount from line 34 on the front of this form					659 10	34
Alberta dividend tax credit: Amount from line 120 of your return	× 6.4% =	6152	+	• 35		
Alberta overseas employment tax credit: Amount from line 426 of federal Schedule 1	× 35% =	6153	+	• 36		
Alberta minimum tax carry-over: Amount from line 427 of federal Schedule 1	× 35% =	6154	+	• 37		
Add lines 35, 36, and 37			=	▶	–	38
Line 34 minus line 38 (if negative, enter "0")					= 659 10	39
Alberta additional tax for minimum tax purposes Form T691: Line 108 minus line 111	× 35% =				+	40
Add lines 39 and 40					= 659 10	41
Enter the provincial foreign tax credit from Form T2036					–	42
Line 41 minus line 42					= 659 10	43

Alberta political contribution tax credit

Enter the Alberta political contributions made in 2003	6003		44	
Credit calculated for line 45 on the *Provincial Worksheet*		(maximum $750)	–	45
Line 43 minus line 45 (if negative, enter "0")			=	46
Enter your royalty tax rebate from Form T79			–	47
Line 46 minus line 47 (if negative, enter "0") Enter the result on line 428 of your return		**Alberta tax**	= 659 10	48

Refund or Balance owing

Net federal tax: Enter the amount from line 19 of Schedule 1 (attach Schedule 1, even if the result is "0")	420	1977 59
CPP contributions payable on self-employment and other earnings (from Schedule 8)	421 +	
Social benefits repayment (enter the amount from line 235)	422 +	
Provincial or territorial tax (attach Form 428, even if the result is "0")	428 +	659 10
Add lines 420 to 428		
This is your **total payable**.	435 =	2636 69 •

Total income tax deducted (from all information slips)	437	2990 00 •	
Refundable Quebec abatement	440 +	•	
CPP overpayment (enter your excess contributions)	448 +	•	
Employment Insurance overpayment (enter your excess contributions)	450 +	•	
Refundable medical expense supplement	452 +	•	
Refund of investment tax credit (attach Form T2038(IND))	454 +	•	
Part XII.2 trust tax credit (box 38 on all T3 slips)	456 +	•	
Employee and partner GST/HST rebate (attach Form GST370)	457 +	•	
Tax paid by instalments	476 +	•	
Provincial or territorial credits (attach Form 479 if it applies)	479 +	•	
Add lines 437 to 479			
These are your **total credits**.	482 =	2990 00 ▶	– 2990 00
Line 435 minus line 482			= -353 31

If the result is negative, you have a **refund**.
If the result is positive, you have a **balance owing**.
Enter the amount below on whichever line applies.

Generally, we do not charge or refund a difference of $2 or less.

Refund 484 353 31 •

Balance owing 485 •

Amount enclosed 486 •

Attach to page 1 a **cheque** or **money order** payable to the Receiver General. Your payment is due no later than April 30, 2004.

Direct deposit – Start or change **(see line 484 in the guide)**

You do not have to complete this area every year. Do not complete it this year if your direct deposit information for your refund has not changed.

Refund and GST/HST credit – To start direct deposit or to change account information only, attach a "void" cheque or complete lines 460, 461, and 462.

Note: To deposit your **CCTB** payments (including certain related provincial or territorial payments) into the **same** account, also check box 463.

Branch number	Institution number	Account number	CCTB
460 (5 digits)	461 (3 digits)	462 (maximum 12 digits)	463 ☐

I certify that the information given on this return and in any documents attached is correct, complete, and fully discloses all my income.

Sign here _____

It is a serious offence to make a false return.

Telephone ( ) Date

490 **For professional tax preparers only**

Name:
Address:

Telephone: ( )

Do not use this area 487 ☐ 488 ☐ •

Privacy Act Personal Information Bank number CCRA/P-PU-005

Please answer the following question

Did you own or hold foreign property at any time in 2003 with a total cost of more than CAN$100,000? (read the "Foreign income" section in the guide for details) ..... 266 Yes ☐ 1 No ☐ 2

If *yes,* attach a completed Form T1135.

If you had dealings with a non-resident trust or corporation in 2003, see the "Foreign income" section in the guide.

As a Canadian resident, you have to report your income from all sources both inside and outside Canada.

Total income

Employment income (box 14 on all T4 slips)			101	
Commissions included on line 101 (box 42 on all T4 slips)	102			
Other employment income			104 +	
Old Age Security pension (box 18 on the T4A(OAS) slip)			113 +	
CPP or QPP benefits (box 20 on the T4A(P) slip)			114 +	
Disability benefits included on line 114 (box 16 on the T4A(P) slip)	152			
Other pensions or superannuation			115 +	
Employment Insurance and other benefits (box 14 on the T4E slip)			119 +	
Taxable amount of dividends from taxable Canadian corporations (see the guide)			120 +	
Interest and other investment income (attach Schedule 4)			121 +	
Net partnership income: limited or non-active partners only (attach Schedule 4)			122 +	
Rental income	Gross 160	Net	126 +	
Taxable capital gains (attach Schedule 3)			127 +	
Support payments received	Total 156	Taxable amount	128 +	
RRSP income (from all T4RSP slips)			129 +	
Other income	Specify:		130 +	
Self-employment income (see lines 135 to 143 in the guide)				
Business income	Gross 162	Net	135 +	
Professional income	Gross 164	Net	137 +	
Commission income	Gross 166	Net	139 +	
Farming income	Gross 168	Net	141 +	
Fishing income	Gross 170	Net	143 +	
Workers' compensation benefits (box 10 on the T5007 slip)	144			
Social assistance payments	145 +			
Net federal supplements (box 21 on the T4A(OAS) slip)	146 +			
Add lines 144, 145, and 146 (see line 250 in the guide)	=		▶ 147 +	
Add lines 101, 104 to 143, and 147				
This is your **total income.**			150 =	

Attach your Schedule 1 (federal tax), and Form 428 (provincial or territorial tax) here. Also attach here any other schedules, information slips, forms, receipts, and documents that you need to include with your return.

Net income

Enter your **total income** from line 150		150	
Pension adjustment (box 52 on all T4 slips and box 34 on all T4A slips)	206		
Registered pension plan deduction (box 20 on all T4 slips and box 32 on all T4A slips)	207		
RRSP deduction (see Schedule 7; attach receipts)	208 +		
Saskatchewan Pension Plan deduction (maximum $600)	209 +		
Annual union, professional, or like dues (box 44 on all T4 slips and receipts)	212 +		
Child care expenses (attach Form T778)	214 +		
Attendant care expenses	215 +		
Business investment loss Gross 228	Allowable deduction 217 +		
Moving expenses	219 +		
Support payments made Total 230	Allowable deduction 220 +		
Carrying charges and interest expenses (attach Schedule 4)	221 +		
Deduction for CPP or QPP contributions on self-employment and other earnings (attach Schedule 8)	222 +		•
Exploration and development expenses (attach Form T1229)	224 +		
Other employment expenses	229 +		
Clergy residence deduction	231 +		
Other deductions Specify:	232 +		
Add lines 207 to 224, 229, 231, and 232.	233 =	▶ –	
Line 150 minus line 233 (if negative, enter "0"). This is your **net income before adjustments**.	234 =		
Social benefits repayment (if you reported income on line 113, 119, or 146, see line 235 in the guide)	235 –		•
Line 234 minus line 235 (if negative, enter "0"). If you have a spouse or common-law partner, see line 236 in the guide. This is your **net income**.	236 =		

Taxable income

Employee home relocation loan deduction (box 37 on all T4 slips)	248		
Security options deductions (stock option and shares)	249 +		
Other payments deduction (if you reported income on line 147, see line 250 in the guide)	250 +		
Limited partnership losses of other years	251 +		
Non-capital losses of other years	252 +		
Net capital losses of other years	253 +		
Capital gains deduction	254 +		
Northern residents deductions (attach Form T2222)	255 +		
Additional deductions Specify:	256 +		
Add lines 248 to 256.	257 =	▶ –	
Line 236 minus line 257 (if negative, enter "0") This is your **taxable income**.	260 =		

Use your taxable income to calculate your federal tax on Schedule 1 and your provincial or territorial tax on Form 428.

T1-2003 Federal Tax Schedule 1

Complete this schedule to claim your federal non-refundable tax credits and to calculate your net federal tax.

You must attach a copy of this schedule to your return.

Enter your **taxable income** from line 260 of your return: 21569 08 — 1

Use the amount on line 1 to determine which **ONE** of the following columns you have to complete.

If the amount on line 1 is:	$32,183 or less	more than $32,183 but not more than $64,368	more than $64,368 but not more than $104,648	more than $104,648
Enter the amount from line 1 above	21569 08 — 2	— 2	— 2	— 2
Base amount	– 0 00 — 3	– 32 183 00 — 3	– 64 368 00 — 3	– 104 648 00 — 3
Line 2 minus line 3 (this amount cannot be negative)	= 21569 08 — 4	= — 4	= — 4	= — 4
Rate	× 16% — 5	× 22% — 5	× 26% — 5	× 29% — 5
Multiply the amount on line 4 by the rate on line 5	= 3451 05 — 6	= — 6	= — 6	= — 6
Tax on base amount	+ 0 00 — 7	+ 5 149 00 — 7	+ 12 230 00 — 7	+ 22 703 00 — 7
Add lines 6 and 7	= 3451 05 — 8	= — 8	= — 8	= — 8

Federal non-refundable tax credits (Read the guide for details about these credits.)

Basic personal amount	**claim $7,756**	300	7756 00
Age amount (if you were born in 1938 or earlier)	(maximum $3,787)	301 +	
Spouse or common-law partner amount:			
Base amount: 7 245 00			
Minus: his or her net income (from page 1 of your return) –			
Result: (if negative, enter "0") =	(maximum $6,586) ▶	303 +	
Amount for an eligible dependant (attach Schedule 5)	(maximum $6,586)	305 +	
Amount for infirm dependants age 18 or older (attach Schedule 5)		306 +	
CPP or QPP contributions:			
through employment from box 16 and box 17 on all T4 slips	(maximum $1,801.80)	308 +	968 76 •
on self-employment and other earnings (from Schedule 8)		310 +	•
Employment Insurance premiums from box 18 on all T4 slips	(maximum $819.00)	312 +	484 38 •
Pension income amount	(maximum $1,000)	314 +	
Caregiver amount (attach Schedule 5)		315 +	
Disability amount		316 +	
Disability amount transferred from a dependant		318 +	
Interest paid on your student loans		319 +	
Tuition and education amounts (attach Schedule 11)		323 +	
Tuition and education amounts transferred from a child		324 +	
Amounts transferred from your spouse or common-law partner (attach Schedule 2)		326 +	
Medical expenses (attach receipts)	330		
Minus: $1,755 or 3% of line 236, whichever is **less**	–		
Subtotal	=		
Minus: Medical expenses adjustment	331 –		
Allowable portion of medical expenses (if negative, enter "0")	=	▶ 332 +	
Add lines 300 to 326, and 332.		335 =	9209 14
Multiply the amount on line 335 by 16% =		338	
Donations and gifts	(attach Schedule 9)	349 +	1473 46
Total federal non-refundable tax credits: Add lines 338 and 349.		350 =	1473 46

continue on the back ⇨

Net federal tax

Enter the amount from line 8 on the other side			9	
Federal tax on split income (from line 4 of Form T1206)	424	+	• 10	
Add lines 9 and 10		=	▶	11
Enter the amount from line 350 on the other side	350			
Federal dividend tax credit (13.3333% of the amount on line 120 of your return)	425	+	•	
Overseas employment tax credit (attach Form T626)	426	+		
Minimum tax carry-over	427	+	•	
Add lines 350, 425, 426, and 427		=	▶ –	12
Basic federal tax: Line 11 minus line 12 (if negative, enter "0")	429	=		13
Federal foreign tax credit: Complete the federal foreign tax credit calculation below and enter the amount from line (i) or line (ii), whichever is **less**			–	14
Federal tax: Line 13 minus line 14 (if negative, enter "0")	406	=		15
Total federal political contributions (attach receipts)	409			
Federal political contribution tax credit (see the guide)	410		•	
Investment tax credit (attach Form T2038(IND))	412	+	•	
Labour-sponsored funds tax credit — Net cost 413 — Allowable credit	414	+	•	
Add lines 410, 412, and 414.	416	=	▶ –	16
Line 15 minus line 16 (if negative, enter "0") (if you have an amount on line 424 above, see Form T1206)	417	=		17
Additional tax on RESP accumulated income payments (attach Form T1172)	418	+		18
Net federal tax: Add lines 17 and 18. Enter this amount on line 420 of your return.	420	=		19

Federal foreign tax credit: (see lines 431 and 433 in the guide)

Make a separate calculation for each foreign country. Enter the result on line 14 above.

Non-business-income tax paid to a foreign country 431 •(i)

Net foreign non-business income * 433 / Net income ** X Basic federal tax *** = (ii)

* Reduce this amount by any income from that foreign country for which you claimed a capital gains deduction, and by any income from that country that was, under a tax treaty, either exempt from tax in that country or deductible as exempt income in Canada (included on line 256). Also reduce this amount by the lesser of lines E and F on Form T626.

** Line 236 plus the amount on line 3 of Form T1206, minus the total of the amounts on lines 248, 249, 250, 253, 254, and minus any amount included on line 256 for foreign income deductible as exempt income under a tax treaty, income deductible as net employment income from a prescribed international organization, or non-taxable tuition assistance from box 21 of the T4E slip. If the result is less than the amount on line 433, enter your **Basic federal tax*** ** on line (ii).

*** Line 429 plus the amount on lines 425 and 426, and minus any refundable Quebec abatement (line 440) and any federal refundable First Nations abatement (line 441 on the return for residents of Yukon).

Blank Tax Forms

Alberta

Alberta Tax and Credits

AB428
T1 General – 2003

Complete this form and **attach a copy** of it to your return. For details, see pages 1 to 4 in the forms book.

Alberta tax

Enter your **taxable income** from line 260 of your return			1
Alberta income tax rate		× 10%	2
Multiply line 1 by line 2	Tax on taxable income	=	3
Alberta tax on split income from Form T1206	6151	+	• 4
Add lines 3 and 4		=	5

Alberta non-refundable tax credits

Important: Provincial non-refundable tax credits may be **different** from the federal amounts claimed on Schedule 1. For details, see the *Provincial Worksheet* and pages 1 to 3 in the forms book.

For internal use only 5608

Basic personal amount	claim $13,525	5804		6
Age amount (if born in 1938 or earlier)	(use provincial worksheet)	5808	+	7
Spouse or common-law partner amount				
Base amount	13,525 00			
Minus: his or her net income from page 1 of your return	–			
Result: (if negative, enter "0")	=	▶ 5812	+	8
Amount for an eligible dependant:				
Base amount	13,525 00			
Minus: his or her net income from line 236 of the return	–			
Result: (if negative, enter "0")	=	▶ 5816	+	9
Amount for infirm dependants age 18 or older	(use provincial worksheet)	5820	+	10
Canada Pension Plan or Quebec Pension Plan contributions				
	(amount from line 308 of your federal Schedule 1)	5824	+	• 11
	(amount from line 310 of your federal Schedule 1)	5828	+	• 12
Employment Insurance premiums	(amount from line 312 of your federal Schedule 1)	5832	+	• 13
Pension income amount	(use provincial worksheet)	5836	+	14
Caregiver amount	(use provincial worksheet)	5840	+	15
Disability amount	(see line 5844 on page 2 in your forms book)	5844	+	16
Disability amount transferred from a dependant				
	(use provincial worksheet)	5848	+	17
Interest paid on your student loan	(amount from line 319 of your federal Schedule 1)	5852	+	18
Your tuition and education amounts	[attach Schedule AB(S11)]	5856	+	19
Tuition and education amounts transferred from a child		5860	+	20
Amounts transferred from your spouse or common-law partner	[attach Schedule AB(S2)]	5864	+	21

Medical expenses	5868			22	
Enter $1,759 or 3% of line 236, whichever is **less**		–		23	
Line 22 minus line 23 (if negative, enter "0")		=		24	
Medical expenses adjustment	(use provincial worksheet) 5872	–		25	
Line 24 minus line 25 (if negative, enter "0")	5876	=	▶ +		26
Add lines 6 through 21, and line 26			5880 =		27
Non-refundable tax credit rate			× 10%		28
Multiply line 27 by line 28			5884 =		29

Donations and gifts:

Amount from line 345 of your federal Schedule 9	× 10% =			30
Amount from line 347 of your federal Schedule 9	× 12.75% =	+		31
Add lines 30 and 31	5896 =	▶ +		32
Add lines 29 and 32	**Alberta non-refundable tax credits** 6150 =		▶ –	33
Line 5 minus line 33 (if negative, enter "0")			=	34

Continue on the back ⇨

Alberta tax *(continued)*

Enter the amount from line 34 on the front of this form						34
Alberta dividend tax credit: Amount from line 120 of your return	× 6.4% =	6152	+	• 35		
Alberta overseas employment tax credit: Amount from line 426 of federal Schedule 1	× 35% =	6153	+	• 36		
Alberta minimum tax carry-over: Amount from line 427 of federal Schedule 1	× 35% =	6154	+	• 37		
Add lines 35, 36, and 37		=		▶	–	38
Line 34 minus line 38 (if negative, enter "0")					=	39
Alberta additional tax for minimum tax purposes Form T691: Line 108 minus line 111	× 35% =				+	40
Add lines 39 and 40					=	41
Enter the provincial foreign tax credit from Form T2036					–	42
Line 41 minus line 42					=	43

Alberta political contribution tax credit

Enter the Alberta political contributions made in 2003	6003		44	
Credit calculated for line 45 on the *Provincial Worksheet*		(maximum $750)	–	45
Line 43 minus line 45 (if negative, enter "0")			=	46
Enter your royalty tax rebate from Form T79			–	47
Line 46 minus line 47 (if negative, enter "0") Enter the result on line 428 of your return		**Alberta tax**	=	48

Refund or Balance owing

Net federal tax: Enter the amount from line 19 of Schedule 1 (attach Schedule 1, even if the result is "0")	420	
CPP contributions payable on self-employment and other earnings (from Schedule 8)	421 +	
Social benefits repayment (enter the amount from line 235)	422 +	
Provincial or territorial tax (attach Form 428, even if the result is "0")	428 +	
Add lines 420 to 428		
This is your **total payable.**	435 =	•

Total income tax deducted (from all information slips)	437	•
Refundable Quebec abatement	440 +	•
CPP overpayment (enter your excess contributions)	448 +	•
Employment Insurance overpayment (enter your excess contributions)	450 +	•
Refundable medical expense supplement	452 +	•
Refund of investment tax credit (attach Form T2038(IND))	454 +	•
Part XII.2 trust tax credit (box 38 on all T3 slips)	456 +	•
Employee and partner GST/HST rebate (attach Form GST370)	457 +	•
Tax paid by instalments	476 +	•
Provincial or territorial credits (attach Form 479 if it applies)	479 +	•
Add lines 437 to 479		
These are your **total credits.**	482 =	▶ –
Line 435 minus line 482		=

If the result is negative, you have a **refund**.
If the result is positive, you have a **balance owing**.
Enter the amount below on whichever line applies.

Generally, we do not charge or refund a difference of $2 or less.

Refund 484 • **Balance owing** 485 •

Amount enclosed 486 •

Attach to page 1 a **cheque** or **money order** payable to the Receiver General. Your payment is due no later than April 30, 2004.

Direct deposit – Start or change **(see line 484 in the guide)**

You do not have to complete this area every year. Do not complete it this year if your direct deposit information for your refund has not changed.

Refund and GST/HST credit – To start direct deposit or to change account information only, attach a "void" cheque or complete lines 460, 461, and 462.

Note: To deposit your **CCTB** payments (including certain related provincial or territorial payments) into the **same** account, also check box 463.

Branch number	Institution number	Account number	CCTB
460 (5 digits)	461 (3 digits)	462 (maximum 12 digits)	463 ☐

I certify that the information given on this return and in any documents attached is correct, complete, and fully discloses all my income.

Sign here _____

It is a serious offence to make a false return.

Telephone ( ) Date

490 **For professional tax preparers only**

Name:
Address:

Telephone: ( )

Do not use this area 487 ☐ 488 ☐ •

Privacy Act Personal Information Bank number CCRA/P-PU-005

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